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美国之音

“每日科学新闻”选

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责任编辑：曾寄萍
责任校对：燕桂珍
封面设计：林胜利

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美国之音编写

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出 版 说 明

《"每日科学新闻"选》是我们从美国之音慢速英语部"每日科学新闻"节目近两年数百篇广播稿中分类精选十六篇编辑而成。美国之音除提供广播稿外，还提供了原声带，为我们配套录制磁带和印制小册子提供了方便，在此特表示感谢。

我们制作发行这一盘录音带，是因为它用简单易懂的语言，介绍了生动的科技新成就，是学习英语和科普知识的绝好教材。我们还请胡滨提供参考译文，便于大家对照阅读。

中国对外翻译出版公司

一九八八年二月

1. Bug Wars

Some of the best weapons against harmful insects are other insects that are their natural enemies. Scientists learned this almost one hundred years ago in California. A tiny insect called the cottony-cushion scale, was causing great damage to the state's orange-growing industry. The insect had come to the United States from Australia, and had no natural enemies in California.

An American Agriculture Department scientist went to Australia. He found that an insect called the Vedalia beetle, or ladybug, attacked and ate the cottony-cushion scale. The scientist brought five hundred of the ladybugs to California and released them in orange-growing areas. They reproduced and spread throughout the state. And they destroyed enough of the mites to end the threat to the orange industry.

Scientists say using one insect to control another does not damage the environment, as some chemical poisons do. And, it costs less than chemicals. Also, the enemy insects continue to attack the harmful ones for a long time, so there is no need to repeat treatments. Natural

一、消灭害虫之战

防治害虫的最好办法，是利用其他昆虫，即害虫的天敌来消灭害虫。科学家们约100年前在加利福尼亚州了解到这一点。一种名叫蜡丝绵蚧的小虫，曾使州的柑橘种植业遭到巨大的损失。这种昆虫是从澳大利亚传到美国来的，在加利福尼亚没有天敌。

美国农业部的一位科学家访问了澳大利亚，他发现有一种名叫维德利甲虫，亦称瓢虫的昆虫，会袭击并吃掉蜡丝绵蚧。这位科学家带回加利福尼亚500个瓢虫，并将它们释放在柑橘种植区。这些瓢虫繁殖后扩散到全州，消灭了大量的害虫，解除了对于柑橘业的威胁。

科学家们认为，以虫治虫不仅不像某些化学农药那样会破坏环境，而且还比化学药剂便宜。此外，敌虫将长期袭击害虫，无需反复施放。天敌虽不能杀死所有的害虫，但它们足以制止害虫造成的大部

enemies cannot kill all the harmful insects. But they can kill enough to stop most of the damage.

Some of the most successful insect weapons are wasps. Wasps work well against such harmful insects as the cereal leaf beetle, the Mexican bean beetle, the citrus black fly and the potato beetle. One kind of wasp is widely used against an insect called the alfalfa weevil. The weevil has been causing as much as one thousand million dollars in damage a vear to alfalfa crops. The wasp attacks the weevil and puts an egg inside the weevil's body. When the young wasp comes out of the egg, it eats the weevil.

Another helpful insect is the predator mite. It is the enemy of the spider mite, an insect that causes damage to a number of crops. Almond farmers in California have found that a few thousand predator mites can protect a hectare of almond trees from spider mites.

Insects also can help control some harmful plants. The seedhead fly is being used against knapweed plants in the western United States. Seedhead flies leave their eggs in the seed part of the plant. The young flies from the eggs destroy as much as ninety-five percent of the seeds.

分破坏。

在最有效的昆虫武器中，有一种是黄蜂，它们对于防治诸如橙角负泥虫、墨西哥豆瓢虫、橘黑刺粉虱和马铃薯甲虫等害虫效果很好。有一种黄蜂被广泛用来防治一种叫苜蓿叶象虫的昆虫。苜蓿叶象虫每年对于苜蓿作物造成的损害高达10亿美元。黄蜂袭击叶象虫，并将卵产在叶象虫体内。卵孵化为幼蜂，就会吃掉叶象虫。

另一种益虫是捕食性螨，它是危害好几种作物的昆虫红叶螨的天敌。加利福尼亚的扁桃种植者发现，几千只捕食性螨即可保护一公顷的扁桃树免遭红蜘蛛的危害。

昆虫还有助于控制某些有害的植物。在美国的西部，种蝇被用来对付矢车菊属植物，这种蝇将卵产在植物的种子中，孵出的幼虫能毁掉95%的种子。

2. Gravity Waves

Teams of scientists from around the world are hoping to be the first to observe gravity waves from space.

Albert Einstein first proposed the existence of gravity waves. He said that all things in the universe have a gravitational force on the matter and energy around them. The bigger an object and the closer it is, the greater its gravitational pull on other objects. Einstein said gravity waves fill the universe, moving through it like waves across an ocean. But they move at the speed of light, reducing and expanding the shape of time and space.

Only a truly huge event, such as the dying explosion of a great star, would give off gravity waves powerful enough ever to be measured on earth. This is because gravity waves on earth would change the distance between two points by less than the width of a tiny part of an atom.

Designing a device to observe and measure only tiny changes is very difficult. It must be able to block out all other influences — earth movements, changes in temperature, even the motion of air.

二、引力波

世界各地的科学家小组都希望第一个观察到来自空间的引力波。

阿尔伯特·爱因斯坦第一个提出了引力波的存在。他认为，宇宙间所有的物体都对它周围的物质和能量具有引力。物体越大，距离越近，对其他物体的引力也越大。爱因斯坦认为，宇宙间充满了引力波，它们在宇宙中运动，犹如波浪在海洋中运动一样。但是，它的运动是以光速进行的，使时间和空间的形状不断缩小和膨胀。

只有非常巨大的事件，诸如一颗大恒星的临终爆炸，才能释放出足以在地球上测出的强大引力波。这是因为，地球上引力波所引起的两点之间的距离变化比原子的一小部分还小。

设计一种能观察和测量这样微小变化的仪器是非常困难的。它必须能够排除所有其他的影响——地球的运动、温度的变化，甚至还有空气的运动。

Scientists have developed two kinds of devices they believe can observe gravity waves. One such device is made from solid aluminum metal and built in the shape of a wide pipe. When a gravity wave strikes this device, the metal should make a sound like a bell.

More recently, a smaller, experimental detector has been built in the United States. This device uses powerful laser lights. The laser beams are reflected back and forth along separate paths of equal length. A passing gravity wave would change the length of the paths. This would change the relationship between the beams of light. The difference Would grow and become easier to see and measure over many reflected trips along the paths.

American scientists want the United States to spend sixty-million dollars to build two larger versions of the experimental detector.

Despite this progress, no one has ever observed a gravity wave. In fact, no one has been able to prove that they even exist. But if they do exist, gravity waves could provide us with a great deal of information about objects in our universe that, until now have been impossible to observe.

科学家已经研制出两种仪器，相信用它们可以观测到引力波。其中的一架仪器是用固体铝金属制造的，像一个大管子。引力波碰到这个装置后，金属会发出像钟一样的响声。

不久以前，美国建造了一台小的供实验用的探测器，这一装置使用了强大的激光。激光光束沿着各自同等长度的路线来回反射。引力波的经过会改变光路的长度，从而改变光束之间的关系。光束沿着光路多次反射后，差别增大，故易于看到并加以测量。

美国科学家希望国家花6 000万美元建造两台大型供实验用的探测器。

除了这项进展以外，迄今还没有人观察到引力波。实际上，还没有人能够证明它的存在。但是，如果引力波确实存在，它就可以向我们提供有关我们宇宙间物体的大量信息，这些信息迄今还是无法观测到的。

3. Voyager/Uranus

America's Voyager-Two spacecraft flew past the planet Uranus two weeks ago today. The spacecraft is already many millions of kilometers past the planet.

But scientists say they have only started their study of the huge amount of information Voyager Two has sent back to Earth. The scientists say this information — so far — shows Uranus is very different from anything else we have studied in our solar system.

Uranus is one of the most distant planets orbiting the Sun. Only Neptune and Pluto are farther away. It is one of the largest planets — four times bigger around than Earth.

Until the Voyager visit, scientists did not know a great deal about Uranus. And they say they still are not able to explain Voyager's discoveries.

Information from Voyager shows that the winds on Uranus blow in the same direction as the planet turns. This is exactly the opposite of what is found on Earth. Earth and most other planets turn, or rotate, like a spinning toy top — standing up Uranus rotates on its side

三、旅行者号与天王星

两周前的今天，美国的旅行者二号宇宙飞船飞经行星天王星。现在，飞船离开这颗行星已有几百万公里。

但是科学家们说，他们刚开始对旅行者二号送回地球的大量信息进行研究。科学家们说，迄今为止收到的信息表明，天王星与太阳系中我们已研究过的其他星体有很大的不同。

天王星是围绕太阳运行最远的行星之一，只有海王星和冥王星比它更远。它又是最大的行星之一，周长约比地球大四倍。

在旅行者号从旁经过之前，科学家们对天王星知之甚少。而且他们说，他们仍然无法对旅行者号的发现作出解释。

旅行者号送回的信息表明，天王星上的风向是与这颗行星自转的方向相一致的，这与地球上的情况正好相反。地球与大多数其他行星都像旋转的陀螺一样，是直立着旋转的。天王星则是倒向一侧旋

— rolling through space like a giant ball.

Voyager discovered that the dark side of Uranus — the side away from the sun — is warmer than the side facing the sun. The rings around Uranus are very dark — not bright like the rings around Saturn. The Saturn rings are mostly small particles. But Voyager found the rings around Uranus are mostly large rocks — one meter across, or bigger.

Voyager's pictures also show that the moons orbiting Uranus are very black — like huge pieces of coal. Not all of them are dead, icy rocks. Some of the Uranus moons seem to have a great deal of geological activity. Voyager's instruments found that Uranus has a thick atmosphere of hydrogen, with clouds of methane. The atmosphere is bitterly cold — about two-hundred degrees below zero, Celsius.

Scientists say they believe the planet may have a rocky center — about the size of Earth. They say the rocky center may be covered by a deep ocean of water. The scientists say this would explain the magnetic forces that Voyager discovered around Uranus.

The spacecraft now is flying toward another planet — Neptune. It will fly past Neptune in **August, Nineteen-Eighty-Nine.**

转，像一个巨大的球在空间滚动。

旅行者号发现，天王星背阴的一面（即不面向太阳的一面）比面向太阳的一面温暖。围绕天王星的光环非常暗，不像围绕土星的光环那样明亮。土星光环主要是由小颗粒组成的。但是旅行者号发现，围绕天王星的光环大多数是直径一米或更大的大石块。

旅行者号拍摄的照片还表明，围绕天王星运行的卫星都非常黑，像是巨大的煤块。它们不都是死寂而冰冷的岩石，天王星的某些卫星上似乎有大量的地质活动。旅行者号的仪器发现，天王星有一层厚厚的氢气层，还有由甲烷组成的云层。这个大气层极为寒冷，约在零下200摄氏度。

科学家们说，他们认为这颗行星也许有一个同地球大小差不多的岩质核心。他们说，这个岩心可能为一大片很深的水所覆盖。科学家们说，这一点可能可以说明旅行者号何以在天王星附近发现磁力。

宇宙飞船现正在向另一颗行星海王星飞去，并将在1989年9月飞经此星。