SCIENCE AND TECHNOLOGY

工程的新闻英语阅读系列 科学技术篇



old him to git along, that I was right , but the plums would taste good on hor his our land ouple. You three oldest boys was little fellers, playin side, real hot an' sweaty, an' your father took you to tank down by the windmill an' took off your clothes ou in. Them two box-elder trees was little then, but shade over the tank. Then he took off all his own n' got in with you. While he was playm' in the water the Methodist preacher drove into our place to say ne neighbours was goin' to meet at the schoolhouse to pray for rain. He drove right to the wind mill, of there was your father and you three with no clothes in the kitchen door, an' I had to laugh, for the ted like he ain't never seen a naked man before. He embarrassed, an' your father couldn't git to his y was all hangin' up on the windmill to let the ut of em. So he laid in the tank where he was, and ou boys on top of him to cover him up a little, an

you got through playin' in the water, he put clean ou and a first 12 2 2 1 1 2 2 2 1 that time I'd t suppers. He says: 'It's too hot in here to eat. Let's have a picme in the orchard. We'll sea our id the mulberry hedge, under them linden trees.'

are III

Wall to be a selection

part of the market of the mark

We make as well enjoy

mentile meaning and a maged they of the Victor amount that silves that we only another magent about the court of a transfer and all they are two about

who the cold links

The comment is presented that the second read of th

PROFESSOR WARR TRESPASOR DIST.

MERSENSER FRANCE



....

PRESIDENCE.

21 世纪新闻英语阅读系列 21st Century English News Reading Series

科学技术篇

Science and Technology

主编 贾国栋编写 肖锦银

華南理工大學出版社 ·广州·

图书在版编目 (CIP) 数据

21 世纪新闻英语阅读系列、科学技术篇/贾国栋主编、一广州: 华南理工大学出版社,2003.6

ISBN 7-5623-1929-4

I. 2··· □. 贾··· □. 英语-语言读物 Ⅳ. H319.4

中国版本图书馆 CIP 数据核字 (2003) 第 035344 号

总 发 行: 华南理工大学出版社

(广州五山华南理工大学 17 号楼,邮编 510640) 发行部电话: 020-87113487 87111048 (传真)

E-mail: scut202@scut.edu.cn http://www2.scut.edu.cn/press

责任编辑:张 颖

印刷者:广东农垦印刷厂

开 本: 850×1168 1/32 印张: 27.25 字数: 710千

版 次: 2003年6月第1版第1次印刷

印 数: 1~3000 册

定 价(共5册): 45.00元

版权所有 盗版必究

CONTENTS

1.	The Year in Science	(1)
2.	2000: The Year of the Genome	
3.	Genetic "Adam Never Met Eve"	· (9)
4.	Scientists Genetically Engineer Super Mice	(12)
5.	Scientists to Perform DNA Tests on King Tut	(16)
6.	"We Can Rebuild Him"	(17)
7.	Research Links Corruption to Environmental Damage	
		(20)
8.	Russia Seeks to Store World's Nuclear Waste	(22)
9.	Tokyo Sends Controversial Nuclear Waste to Northern	
	Japan ·····	(23)
10.	Coral Record Reveals Secrets of El Nino	(25)
11.	Arctic Ozone Damage "Likely by 2020"	(27)
12.	Global Warming "Worse Than Feared"	(31)
13.	Global Climate Warmer in 2000 ······	(34)
14.	Disaster Readiness "Could Save Thousands"	(37)
15.	Mexico Set to Have Eco-taxis ······	(40)
16.	Everglades: Ecosystem on the Brink	(43)
17.	Birds Sing in Their Sleep ······	(45)
18.	"The Dragon Seekers"	(47)
19.	Hoof-and-Mouth Scare Hits Germany	(50)
20.	Welcome to the Online World!	(52)
		1

21.	Who Owns Internet? (54)
22.	The Brief History of Internet (55)
23.	Make Contacts on Net (58)
24.	Shopping on the Internet (61)
25.	Games on Internet(62)
26.	Hacking: A History (64)
27.	Microsoft Downplays Hack Attack (71)
28.	Clear and Present Danger? (75)
29.	Boo is Back (79)
30.	Digital Education Comes to American Universities (82)
31.	Not Your Parents' Grade School (84)
32.	New Software Makes Internet "Senior-Friendly" (89)
33.	Light Speed: Optical Computers Promise Amazing Power
	(31)
34.	Space Exploration: Chapter Four (95)
34. 35.	(31)
	Space Exploration: Chapter Four (95)
35 .	Space Exploration: Chapter Four (95) Discovery Closes in on Space Station (98)
35 .	Space Exploration: Chapter Four
35. 36.	Space Exploration: Chapter Four
35. 36.	Space Exploration: Chapter Four
35. 36. 37. 38.	Space Exploration: Chapter Four
35. 36. 37. 38. 39.	Space Exploration: Chapter Four
35. 36. 37. 38. 39. 40.	Space Exploration: Chapter Four
35. 36. 37. 38. 39. 40. 41.	Space Exploration: Chapter Four
35. 36. 37. 38. 39. 40. 41. 42.	Space Exploration: Chapter Four

46.	Spacecraft Moves in on Asteroid	(120)
47.	Researchers Again Point to Possible Ancient Life on Ma	rs
		(123)
48.	A Mars-Like Project ·····	(127)
49.	Heavy Traffic Heads for Mars	(133)
50.	Cassini Flies by Jupiter ·····	(135)
51.	Four New Moons Found Circling Saturn	(138)
52.	9	(140)
53.	U.S. to Make Rocket Man	(142)
54.	Spacecraft Films Spectacular Light Show	(144)
55.	Geologists Find the World's Oldest Rock in Australia	
		(146)
56.	U.S. Company to Build World's Largest Wind Farm	
		(147)
57.	XM Satellite Radio — The New "FM" · · · · · · · · · · · · · · · · · · ·	(149)
58.	Greenpeace Chief Off to New Pastures	(153)
59.	Beautiful People "Ruin" Lives	(156)
60.	Chicago's Museum of Science: Timekeeping Exhibit	
		(159)

1. The Year in Science

Science Magazine Rates the Top Advances That Will Change the World

Compiling maps and sequences for the genetic pattern of a variety of organisms "might well be the breakthrough of the decade, perhaps even the century, for all its potential to alter our view of the world we live in," the journal said.

Science each year picks the scientific advances that its editors believe to be the most significant of the past 12 months. The selections for 2000 appear in the journal today.

Biological Breakthroughs

The journal noted that industrial-sized efforts to sequence ^① the genetic pattern of fruit flies^②, plants, mice, worms, bacteria and people represent "biology's first foray^③ into big science, and by almost any measure, it has been a great success."

In May, 1999, the journal said, researchers had completed human genome⁴ sequences that covered just a fraction of the whole genetic pattern. By August of this year, more than 4 billion base pairs of DNA⁵ had been sequenced and archived⁶.

① sequence vt. 把……按顺序排好

② fruit fly 果蝇

③ foray n. 涉足,尝试

④ genome n. 基因组, 染色体组

⑤ DNA 脱氧核糖核酸 (deoxyribonucleic acid)

⑥ archive vt. 存档



Deciphering the genetic code has been named the "breakthrough of the year"

"New techniques in the form of better automated sequencers^①, as well as intense competition between public and private sequencing efforts, drove this acceleration," the journal said.

The year saw the climax of a race to sequence the human genome. On one side was an international, government consortium² headed³ by the National Human Genome Research Institute. On the other side was a private company, Celera Genomics of Rockville, Md.

At a White House ceremony in June, presided over by President Clinton, leaders of

the public and private efforts made a joint announcement that a rough draft of the human genome had been completed ahead of schedule.

"Today ... marks a historic point in the 100,000 years record of humanity," J. Craig Venter, head of Celera, told a White House audience.

Dr. Francis Collins, director of the government program, said mapping[®] the human genetic pattern means "we have caught a glimpse of an instruction book previously known only to God."

Researchers predicted that the achievement would lead to revolu-

① sequencer n. 顺序分析仪 (确定生物学的聚合体中成分顺序的仪器)

② consortium n. 社团, 协会, 联盟, (国际) 财团

③ head vt. 主管, 领导

④ map vt. 绘制 (某物的) 形态图

tionary ways to make new drugs and cure disease.

The genetic pattern of a worm, a fruit fly and a plant, all used in laboratory research, have been mapped, along with some five dozen microbes^①, the journal said. Nearing^② completion are genome maps for the mouse, rat, zebrafish^③ and two types of pufferfish^④.

Runner-Up^(\$): RNA's Role

As the runner-up breakthrough of the year, *Science* picked advances in understanding the action of ribonucleic acid[®], or RNA, within the protein factory of the cell, a structure called the ribosome. Science said these studies are showing researchers how proteins are assembled from amino acids within the cells, a key action in biology.

Other breakthroughs, which the journal said were selected "in no particular order," are:

- Discovery of a 1.7 million-year-old fossil in the Republic of Georgia supporting the theory that humans migrated into the rest of the world after evolving in Africa.
- The development of plastics that conduct electricity. This is seen as a step toward using cheap organic molecules to make components for computers, cell phones, lasers and other electronic devices.
 - Studies showing that adult cells can be manipulated to trans-

① microbe n. 微生物,细菌

② near v. 接近, 走近

③ zebrafish n. 蓑鮋

④ pufferfish n. 鲀, 刺鲀

⑤ runner-up n. (竞赛中的) 第二名, 亚军; 冠军以下的优胜者

⑥ ribonucleic acid n. 核糖核酸 (略作 RNA)

form into a variety of other types of cells, such as turning bone marrow^① into brain cells. Cell manipulation has also led to the first-ever^② cloning of pigs, the journal said.

- The discovery by spacecraft orbiting^③ Mars that the planet may once have been covered by water and that there may be frozen pools of water still there. Researchers believe the presence of water increases the possibility of life on the Red Planet.
- Instruments carried aloft^④ by balloons that have mapped the microwave afterglow^⑤ of the "Big Bang," the immense explosion that is thought to have started the universe. The results strengthened the belief that the present universe is flat and will expand forever.
- Researchers' findings that signaling proteins within cells are implicated^⑤ in cancer, heart disease and diabetes. The work could lead to new drugs that would block the action of those proteins to treat disease.
- \blacksquare NASA $^{\textcircled{O}}$'s NEAR Shoemaker spacecraft, which became the first probe to slip into the orbit of an asteroid $^{\textcircled{®}}$. The spacecraft has

① marrow n. 髓, 骨髓

② first-ever adj. 破天荒第一次(或第一个)的

③ orbit vt. 轨道运行,沿轨道运行

④ aloft adv. 在高处,在上

⑤ afterglow n. (灼热金属等的) 残炽

⑥ implicate vt. 使牵连其中

NASA (美国) 国家航空和宇宙航行局 (National Aeronautics and Space Administration)

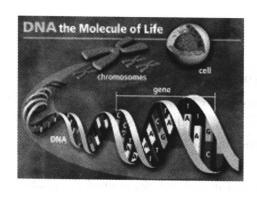
[®] asteroid n. 行星, 小游星

circled the 21 miles wide $\mathrm{Eros}^{\mathbb{O}}$ asteroid for 6 months, unlocking chemical secrets of some of the most primitive material in the solar system.

Advances in the bizarre world of quantum[®] research, which have led to discoveries of electrical fields and motions that may help develop new types of computers and electrical circuitry[®].

Science is one of the world's leading general science, peerreviewed journals. It is published by the American Association for the Advancement of Science.

2. 2000: The Year of the Genome



2000 has been the year of the genome. Gene mapping — finding the sequence of all genes in a living thing — sped ahead in the past 12 months as scientists decoded^⑤ the book of life in a variety of organisms, from people to

① Eros (希腊神话中的)爱神厄洛斯(相当于罗马神话中的爱神丘比特 Cupid,为艺术作品中常见题材)

② unlock vt. 揭开

③ quantum n. 量子, 量子论

④ circuitry n. 电路,线路

⑤ decode vt. 解码, 译解

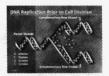
the cholera^① bacterium.

Until this year, researchers had read the complete genetic code for only one multicelled organism — the simple worm C. elegans. Now, gene sequences exist for humans, the fruit fly, a common weed, and some disease microbes 3 .

The first to be revealed was the fruit fly genome in March, providing insights into the mysteries of animal design. Biologists at Celera Genomics, of Rockville, in Maryland, and the University of California described the location of nearly 14,000 of the bug's genes—the molecules in cells that determine its physical makeup⁴.

Celera chose the fly as a pilot project for tackling the much larger human genome. In surveying human DNA, the firm raced against a consortium of academic centers led by the U.S. government's National Institutes of Health.

But they came together in late June to announce that the project was 97 percent complete. "Today we celebrate the revelation of the first draft of the human book of life," said Francis Collins, chief of the U.S. government-led human genome project.



He announced that the researchers had determined the position of more than 3 billion individual chemicals that make up our genome.

① cholera n. 霍乱

② multicelled adj. 多细胞的

③ microbe n. 微生物,细菌

④ makeup n. 组成,结构

"The sequence that has been generated by these two efforts," said Mr. Collins, "should be an enabler^① of the future understanding of human biology like no other we've ever had."

Simply knowing the sequence of an organism's genes does not explain what specific physical traits and diseases they cause. But it makes that research easier. According to the chief of Celera Genomics, Craig Venter, the human blueprint² will allow pharmaceutical³ companies to more quickly develop drugs that target disease-producing proteins made by mutant⁴ genes. "Without having all the genes known, without having all the receptors and the various targets, without understanding where in our physiology to intervene to try and block cancer, it's very difficult to develop new drugs in that process," he said.

The same hope permeated the announcement in August of the genome for the disease bacterium cholera. Harvard University researcher John Mekalanos said the gene map showed the microbe's inner workings, and could lead to medicines and vaccines^⑤ to reduce the global cholera burden. "That makes it very much more an open book^⑥ to understand what this organism has inside it, and really promises to allow us to delete systematically every potential

① enabler n. 为……提供条件(机会、手段)者

② blueprint n. 蓝图,设计图

③ pharmaceutical adj. 制药的

④ mutant n. 突变异种

⑤ vaccine n. 疫苗, 牛痘疫苗

⑥ an open book 尽人皆知的事实, 人人可理解的事物

virulence $^{\textcircled{1}}$ gene we can identify to end up with an organism that is extremely safe and hopefully more potent $^{\textcircled{2}}$ in terms of its immunizing $^{\textcircled{3}}$ activity, added Mr. Mekalanos.



Arabidopsis thaliana

more plentiful crops.

In December came news of the first gene map of a plant — a weed in the mustard family named *Arabidopsis thaliana*. *Arabidopsis* is a model for 250,000 plant species, including the world's most common food plants. Knowing its genome will allow scientists to manipulate similar genes in other plants, to produce hardier and

According to biologist Rob Martienssen, of Cold Spring Harbor Laboratory in New York, the effort could also lead to new drugs. "Plants actually have many of the same genes as people do," he said. "Some of discoveries made by the Arabidopsis Genome Project are remarkable in the number of human-disease genes that are present in Arabidopsis. The breast-cancer-one and breast-cancer-two genes are actually found in Arabidopsis. And there are many, many more."

① virulence n. 病毒性

② potent adj. 强力的, 有效力的 (药等)

③ immunize vt. 使免疫, 赋予免疫性, 使成为无害

④ mustard n. 芥菜

⑤ Arabidopsis thaliana 拟南芥菜(由于其基因组较小,生命周期较短,遗传图谱和物理图谱详尽,成为显花植物遗传研究最流行的模式植物,对植物分子遗传学的研究有极为重要的意义)

Soon to follow these successes will be genome maps of the mouse, rat, zebrafish and two species of puffer fish. The rodent[®] genomes will be especially useful because the animals are key to human disease research.

These advances bring ethical[©] questions about manipulating life. Yet gene sequencing's potential for advancing human health and welfare has made its allure[®] irresistible.

3. Genetic "Adam Never Met Eve"

The most recent ancestor of all males living today was a man who lived in Africa around 59,000 years ago, according to an international team of researchers.

The scientists from eight countries have drawn up a genetic family tree of



The study confirms the Out of Africa hypothesis

mankind by studying variations in the Y chromosome[®] of more than 1,000 men from different communities around the world. The Y

① rodent adj. 啮齿目的 n. 啮齿动物 (如老鼠)

② ethical adj. 与伦理有关的

③ allure n. 诱惑力

④ chromosome n. 染色体

chromosome is one of the 2 sex chromosomes (X and Y) which only men carry (women carry 2 X chromosomes).

The new research confirms the Out of Africa theory that modern humans originated in Africa before slowly spreading across the world.

But the finding raises new questions, not least because our most recent paternal $^{\bigcirc}$ ancestor would have been about 84,000 years younger than our maternal $^{\bigcirc}$ one.

The team believes there is an explanation. They propose that the human genetic blueprint evolved as a mosaic[®], with different pieces of modern DNA emerging and spreading throughout the human population at different times.

Origins of Man

Evidence from the fossil record suggests that modern man originated in Africa about 150,000 years ago, before moving steadily across the globe.

This Out of Africa hypothesis has been confirmed by studies of mitochondrial[®] DNA, the segment of genetic material that is inherited exclusively from the mother.

Based on these studies, our most recent common ancestor is thought to be a woman who lived in Africa some 143,000 years ago, the so-called Mitochondrial Eve.

To find the common paternal ancestor, the team drew up a

① paternal adj. 父系的; 父方的

② maternal adj. 母方的; 母系的

③ mosaic n. 不同事物拼凑而成之物

④ mitochondrial n. 线粒体 RNA