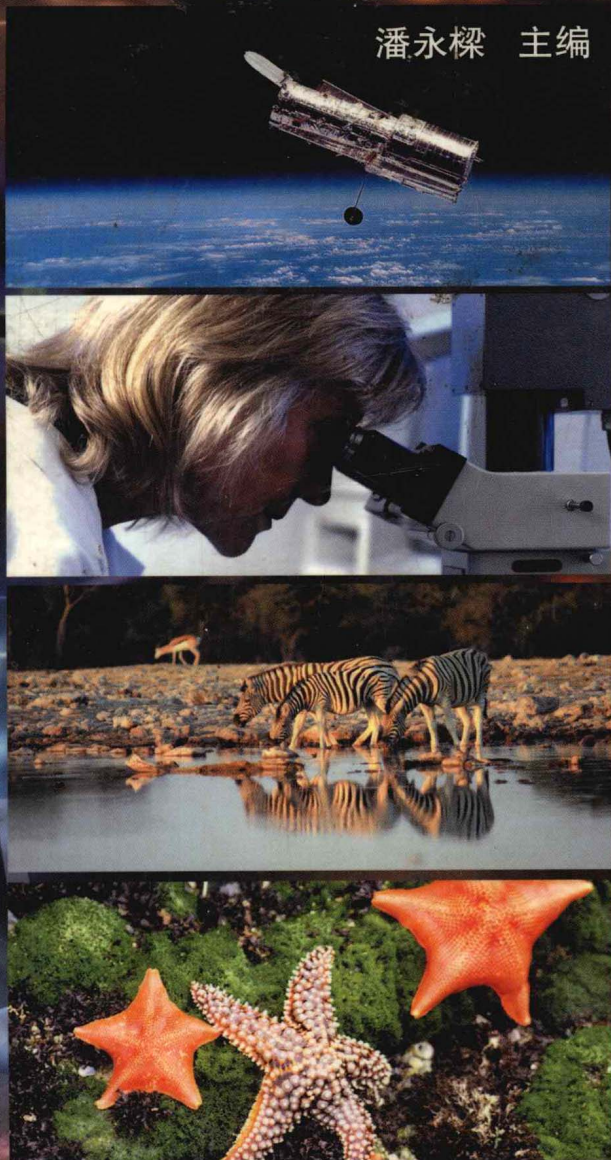


A NEW CENTURY ENGLISH READER IN POPULAR SCIENCE

潘永樑 主编

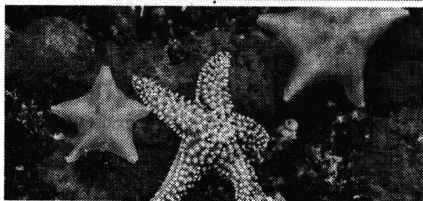
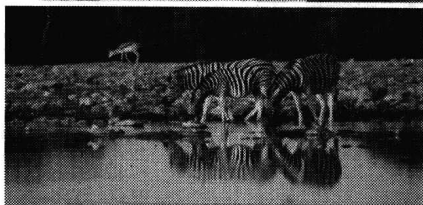
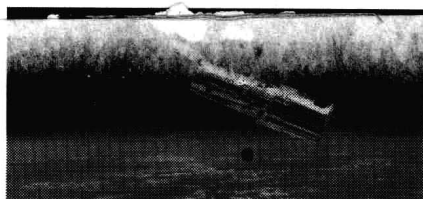
新世纪英语科普阅读



上海外语教育出版社
外教社 SHANGHAI FOREIGN LANGUAGE EDUCATION PRESS

新世纪英语科普阅读

主 编 潘永樑
副主编 赵福利 陈春华



Whi
外教社

上海外语教育出版社
SHANGHAI FOREIGN LANGUAGE EDUCATION PRESS

图书在版编目(CIP)数据

新世纪英语科普阅读 / 潘永樑编. - 上海:

上海外语教育出版社, 2002

ISBN 7-81080-455-3

I. 新… II. 潘… III. 英语 - 语音读物

IV. H319.4

中国版本图书馆 CIP 数据核字(2002)第 025999 号

出版发行: **上海外语教育出版社**

(上海外国语大学内) 邮编: 200083

电 话: 021-65425300 (总机), 65422031 (发行部)

电子邮箱: bookinfo@sflep.com.cn

网 址: <http://www.sflep.com.cn> <http://www.sflep.com>

责任编辑: 吕光旦

印 刷: 上海市崇明县裕安印刷厂

经 销: 新华书店上海发行所

开 本: 850×1168 1/32 印张 11.75 字数 341 千字

版 次: 2002 年 8 月第 1 版 2002 年 8 月第 1 次印刷

印 数: 5 000 册

书 号: ISBN 7-81080-455-3 / G · 231

定 价: 15.60 元

本版图书如有印装质量问题,可向本社调换

前 言

《新世纪英语科普阅读》是我们为学习英语的中国学生编写的当代英语系列读物之一。收集的课文全部选自最近一年多来从因特网上检索到的和下载的英语短文,集中介绍和报导科技领域的最新进展,并展望科学与技术给新世纪的当代人可能带来的影响。这些英语短文的作者均是有关方面的专家,文字规范,深入浅出,配以适当的练习后,成为宜于我国英语学习者使用的阅读材料。本书编为三个部分:一、物质世界的神奇;二、生命科学的奥秘;三、新世纪展望。

本书的读者对象:

本书的对象为国内大学中英语程度已达到四级至六级水平、并想有效地复习英语常用词汇和扩大英语科技词汇量的英语学习者。在大学二、三年级,如何较快地扩大学生的英语词汇量,提高学生阅读英语科技文章的能力,一直是教学中的一个重要课题。在历年的全国英语统测、尤其是公共外语四级与六级的英语统测的阅读和听力部分,也经常包含较大比例的科普内容的题目。这些题目由于涉及的内容新,而且使用的英语词汇具有一定的专业性,学生在答题时往往感到困难。本书介绍现代科技的最新进展,短文中提供的的新知识和英语词汇对这些英语学习者尤其有用。学生可以把本书当做科普英语的自学材料来用,教师也可以把本书用作英语阅读课的教材或英语课外补充读物。

本书的特点综述:

- 本书的材料新,信息量大,反映了现代科学技术和现代生活中一些重要领域的最新事物和最新发展,具有强烈的时代感。
- 本书所收集的英语文本具有科学性和趣味性,有关的新知识和科技英语词汇对英语学习者很有用,内容具有吸引力。短文对现代科学技术新领域的介绍,深入浅出,通俗易懂,英语文字规范,有利于提高学生的英语阅读能力。每课短小精悍,宜于一次读完,并做练习。
- 本书在教学中具有实用性。为了使阅读材料适合大学里中级英语水平的学习者使用,编者以大学英语四级至六级水平为衡量标准,筛选了许多英语文本资料,在个别情况下,为了便于在教学中使用,对原文中较难的句子作了少量删节。每篇短文都配有一定的注释和练习,使它们适合在英语阅读教学或课外阅读中使用。
- 在编写本读物的过程中,编者用计算机软件检索了文本中的英语词汇,并与我国的大学英语四级词汇和六级词汇表相对照,找出了文本中超过四级至六级水平的词汇。并在每篇短文后面的注释部分,对一些较难的词汇及一些专用名词用汉语作了必要的注释,便于学习者自学使用。
- 为了帮助读者巩固和扩展使用基础英语词汇的能力,编者在每篇读物的练习部分,设计了本文中出现的四级至六级英语常用词汇的填空练习。即从每篇短文中选10个这样的基础英语常用词汇,全书共计选了790个常用词,配以填空练习,以便学习者复习使用。另一个特点是,这些填空练习所用的英语句子,都是编者使用语料库软件专门从英语科贝尔特语料库(Co-build Database)中检索出来的真实英语句子,这就使练习的材料反映这些基础英语词汇的实际使用情况,有助于学生掌握地道的英语。

- 每篇读物的练习部分都提供本文的思考题3至5个,以便帮助学习者复习本文的主要内容。教师也可使用这些思考题指导学生进行英语口语讨论或学写短文。

编者

2002年5月,于洛阳

Contents

目 录

Part One: Wonders of the Material World

第一部分：物质世界的神奇

The Nano Future (<i>Sebastian Rupley</i>)	3
纳米未来	
Core Concepts of Molecular Nanotechnology	7
分子纳米技术的核心概念	
Technology Spells MEMS in Future (<i>John Yaukey</i>)	12
未来技术意味着微电子机械系统	
What Is IT? (<i>John R. Quain</i>)	18
IT 为何物?	
Antimatter (<i>R. Michael Barnett & Helen Quinn</i>)	22
反物质	
Chaos Theory and Social Sciences	27
混沌理论和社会科学	
Dark Matter: Theory or Fact (<i>Rhett Herman & Shane L. Larson</i>)	31
黑暗物质	
Expanding Space (<i>Joel R. Primack</i>)	37
正在扩大的宇宙	
Gravity: a Particle or a Wave? (<i>Bradley Carroll</i>)	41
重力: 粒子还是波?	
Massive Black Holes (<i>R. Cowen</i>)	45
巨大的黑洞	

Magnetic Distortion of Space (<i>Charles Torre</i>)	49
空间的磁力扭曲	
Time Traveler (<i>William A. Hiscock</i>)	53
时空旅行者	
Fuzzy Logic and Its Application	58
模糊逻辑及其应用	
No Hurricane Hit the West Coast of the US	64
飓风从不袭击美国西海岸	
An Environmental Solution: Ionic Liquids May Replace Hazardous Solvents (<i>Rebecca Renner</i>)	68
离子液可能代替有害溶剂:一种环保方案	
The Size of a Rainbow (<i>William Ducker</i>)	73
彩虹的大小	
Alternative Fuels in Automobiles (<i>Raghubir P. Gupta</i>)	77
汽车的另类燃料	
Buried Garbage (<i>Ted Lindeman</i>)	81
掩埋的垃圾	
“Solid – state” Data Storage (<i>Glenn T. Sincerbox</i>)	85
“固态”数据存储	
The Metaphor of the Computer Virus	89
计算机病毒这个隐喻	
Two Views on Neural Computers	93
关于神经电脑的两种观点	
Nose Chips (<i>Steven Sunshine</i>)	97
鼻子芯片	
DNA – based Computers	102
脱氧核糖核酸为基础的电脑	
CTI (computer telephony integration) (<i>John Fike</i>)	107
电脑电话二合一	
Future for Digital Snapshots Looks Crisp (<i>P. Weiss</i>)	112
数字式快照远景看好	

Wireless Wonder (<i>Wendy M. Grossman</i>)	116
无线通讯的奇迹	
Quantum Mechanics to Change Computing (<i>John Youkey</i>)	121
量子力学将改变计算机的功能	

Part Two: Discoveries in Life Sciences

第二部分：生命科学的奥秘

Humans' Unique in Intelligence (<i>Paul Grobstein</i>)	127
人的智能独一无二	
Science Finds No Limit on Life Span (<i>Tim Friend</i>)	132
科学发现人的寿命没有限度	
Creativity and the Right Hemisphere of the Brain (<i>Ned Herrmann</i>) ...	138
大脑右半球与人的创造能力	
AIDS and the Immune System (<i>William Chris Woodward</i>)	143
艾滋病与免疫系统	
Antibiotic-resistant Bacteria (<i>Stuart B. Levy</i>)	148
对抗生素有抵抗能力的细菌	
Engineering Beneficial Viruses (<i>Leslie Snider</i>)	152
制造有益的病毒	
Preparing for Battle (<i>Mark Fischetti</i>)	156
准备战斗	
Skin So Fixed (<i>Julia Karow</i>)	161
皮肤养护	
The Human Race: Evolving or Devolving? (<i>Michael J. Dougherty</i>)	
.....	166
人类还在进化吗?	
Caffeine Affects the Body (<i>Neal J. Smatresk</i>)	170
咖啡因影响身体	
Caloric Assumption and Aging (<i>Barbara C. Hansen</i>)	174

热量消耗与衰老	
DNA Traits (<i>Stuart E. Ravnik</i>)	179
脱氧核糖核酸的特性	
The Post-Genome Project (<i>Karen Hopkin</i>)	183
后基因组工程	
Effects of Human Isolation Project (<i>Nick Kanas</i>)	188
孤独对人的影响	
Electromagnetic Fields and Health (<i>Charles F. Stevens</i>)	194
电磁场与健康	
Evolution of Sleeping (<i>Irene Tobler</i>)	197
睡眠的演变	
Headache (<i>Norman Harden</i>)	201
头痛	
Do Vitamins in Pills Differ from Those in Food? (<i>Christine Rosenbloom</i>)	204
维生素药片与维生素食物	
Brain; Some Choose to Lose Memory (<i>Helen Pearson</i>)	208
大脑的遗忘功能	
Humans Getting Taller (<i>Michael J. Dougherty</i>)	212
人类在长高	
Health Benefits (if any) of Circumcision (<i>Ronald L. Poland</i>)	217
割包皮的保健作用	
Inherited Genes of Fundamental Personality Traits (<i>Paul Grobstein</i>)	221
基本人格特征的遗传基因	
No Heart Cancer (<i>Alex Aller</i>)	224
心脏无癌症	
The Function of the Human Appendix (<i>Loren G. Martin</i>)	227
人类阑尾的功能	
The Human Homing Instinct (<i>C. Randy Gallistel</i>)	231
人类的寻的本能	
Do Animals Have Culture? (<i>Meredith Small</i>)	234

动物有文化吗?	
Homo Sapiens: A Migratory Species (<i>Hollis L. Engley</i>)	240
智人:一个迁徙的物种	

Part Three: Prospects for the New Century **第三部分: 新世纪展望**

Technology's Ubiquitous Reach	246
科技无处不在	
Technology to Pervade Daily Routine	253
科技深入日常生活	
Changes in the Family (<i>Hollis L. Engley</i>)	258
家庭的变化	
Incision-sealing Glues and Adhesives (<i>Arthur Coury</i>)	263
开刀封口的粘合剂	
Medical Effect of Cloning (<i>James Robl</i>)	268
克隆的医学用途	
Umbilical Cord Blood Stem-cell Therapy (<i>Gregory Hale</i>)	273
脐带血液干细胞疗法	
Your Future Medical Care (<i>Elizabeth Neus</i>)	277
你未来的医疗保健	
Military Drafts High-tech Devices (<i>Steven Komarow</i>)	282
军队拟用高科技装备	
Army Meets 007 (<i>Dan McCosh</i>)	288
军队使用特工装备	
Cars More Fuel-efficient and Safer in New Millennium (<i>Dale Jewett</i>)	292
新世纪的车更省油、效率更高	
Minor Life Changes Add Up to Pollution Solution (<i>Erin Kelly</i>)	297
生活中微小的变化有助于解决污染	

Cyber Rules Changing Legal Landscape (<i>Mark Grossman</i>)	302
电脑规则改变法律环境	
Old Computers, New Problems (<i>Bill Bergstrom</i>)	307
旧电脑, 新问题	
Futuristic Body Scanner Records Measurements (<i>Natalia Brubaker</i>)	311
未来派的身体扫描仪记录身体尺寸	
Millennium May Spawn Space Travel (<i>Fredreka Schouten</i>)	315
新千年可能发展太空旅游	
New Hope for Hearts (<i>Arthur Fisher</i>)	319
心脏的新希望	
Next Generation Robot with the Hands of Astronaut (<i>C. Bryson Hull</i>)	324
配备太空人手的下一代机器人	
What Happens to the Youngest as the Population Ages? (<i>Elizabeth Neus</i>)	329
人口老化时年轻人怎么办?	
Digital Means Democratic in Arts World (<i>Lee Krenis More</i>)	334
数字化意味着艺术更加自由	
Free Agents to Play Bigger Role in the Working World	340
工作世界中自由职业者发挥更大作用	
Futuristic Reading (<i>Martha Mendoza</i>)	343
未来派阅读方式	
Grieving Mother Finds Solace on Net (<i>Karen Thomas</i>)	347
悲哀的母亲在网络上得到安慰	
Knowledge Age Demands Perpetual Learning (<i>Jennifer E. Mabry</i>)	351
知识时代要求不断学习	
Learning Adopted Beyond Campuses (<i>Deborah Mathis</i>)	356
在校园外进行的学习	
Higher Primates May Have Asian Root (<i>B. Bower</i>)	360
高级灵长类可能源自亚洲	

Part One: Wonders of the Material World

第一部分：物质世界的神奇

The Nano Future (*Sebastian Rupley*)

纳米未来

Core Concepts of Molecular Nanotechnology

分子纳米技术的核心概念

Technology Spells MEMS in Future (*John Yaukey*)

未来技术意味着微电子机械系统

What Is IT? (*John R. Quain*)

IT 为何物?

Antimatter (*R. Michael Barnett & Helen Quinn*)

反物质

Chaos Theory and Social Sciences

混沌理论和社会科学

Dark Matter: (*Rhett Herman & Shane L. Larson*)

黑暗物质

Expanding Space (*Joel R. Primack*)

正在扩大的宇宙

Gravity: a Particle or a Wave ? (*Bradley Carroll*)

重力: 粒子还是波?

Massive Black Holes (*R. Cowen*)

巨大的黑洞

.....

.....

The Nano¹ Future

Sebastian Rupley

Tiny speck-like devices could transform computing and medicine, but some people are worried. What if you could take tiny specks² of matter and make them into intelligent machines? The idea has fascinated scientists for decades, including the late physicist Richard Feynman, who wrote about the idea, dubbed³ *nanotechnology*⁴. Now, efforts to make the idea real are accelerating, even as warnings about tiny devices are escalating⁵.

Atom by Atom

The primary idea in nanotechnology is that atoms can be treated discretely⁶ to build structures, which, in terms of implications for technology, could mean that matter could be manipulated into tiny machines capable of self-replication⁷. Nanotechnology also has broad medical implications. If atoms can be manipulated one by one, then it might be possible to edit DNA⁸, for example, to prevent disease and aging.

As an example of how nanotechnology has already been applied, IBM researchers recently reported that they have been able to shrink circuits down to the atomic level, which could lead to multihundred-fold increases in hard disk capacity. Other companies, including Hewlett-Packard, are working with nanotechnology, and NASA⁹ has been striking partnerships with organizations involved in nanotechnology research.

Storage isn't the only computing technology where such shrinkage¹⁰ could have broad implications. Nanotechnologists hypothesize that if some of the atoms in a speck of matter could be made to act as electronic switches, then today's computers featuring billions of transistors could give way to

computers stocked with much more processing power. A supercomputer the size of a droplet¹¹ of water might be possible.

In a recent speech at the California Institute of Technology, President Clinton said: "The ability to manipulate matter at the atomic and molecular level has broad implications. Imagine the possibilities; materials with ten times the strength of steel and only a small fraction of the weight — shrinking all the information housed at the Library of Congress¹² into a device the size of a sugar cube — or detecting cancerous tumors¹³ when they are only a few cells in size."

As promising as such ideas look to be, some observers see the move toward nanotechnology as a threat — even a potentially apocalyptic¹⁴ one. Sun Microsystems' chief scientist Bill Joy¹⁵ recently said that the fact that components in nanotechnologies can become self-replicating could be a threat to humankind. He suggests, for example, that a molecular-size intelligent machine that can alter DNA could do so harmfully and then replicate to the point where it is out of control, like a runaway¹⁶ virus. He also suggests that nanotechnology may help computers take on human-level intelligence in the coming decades, possibly over-empowering¹⁷ them.

I. Notes to the text

1. nano: (10^{-9}) 毫微; 纳米
2. speck: 斑点
3. dub: 把……称为
4. nanotechnology: 纳米技术
5. escalate: 逐步增加
6. discretely: 分离地
7. replication: 复制
8. DNA: 脱氧核糖核酸
9. NASA: 美国国家航空航天局
10. shrinkage: 缩小, 收缩
11. droplet: 小滴
12. Library of Congress: 美国国会图书馆

13. tumor: 瘤
14. apocalyptic: 漫无边际作预言的, 预示性的
15. Bill Joy: 美国 Sun 公司生产 SUN 系列的计算机工作站和网络产品, 是 JAVA 语言的创始者
16. runaway: 失控的
17. empower: 使能够

II. Band- 6 vocabulary exercises

The following ten words are taken from the text. Please examine their respective use, and then fill in the blank of each sentence below with one of these words.

fascinate	accelerate	terms	implication	capacity
feature	process	component	alter	detect

1. As a learner you may not ride a motorcycle which has an engine _____ exceeding 125cc.
2. We need a defense against development pressures both in _____ of building and recreation.
3. It takes more than good looks to make a good picture. The most important thing, to me, is that your work should _____ you.
4. The author of last week's report will not win friends among teachers with their _____ that it is up to them to make their lessons more interesting.
5. If held lightly between centres, you can _____ whether it is out of balance by the heavy part going down.
6. The third year course in European Cinema will normally include a _____ on Italian film.
7. Practical experience is a _____ of the programme and two periods of vacation training are required.
8. The sun plays a large part in premature ageing, since it _____ the process by destroying the skin's elasticity(弹性).
9. This fashion was to sweep away many established gardens and _____ the look of the English countryside for all time.