科 技 英 语 阅 读 系 列

田传茂 许明武 杨 宏 编

# 生命科学

Life Science

华中科技大学出版社

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田传茂　许明武　杨　宏　编

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**图书在版编目(CIP)数据**

科技英语阅读系列　生命科学/田传茂　等编
武汉:华中科技大学出版社，　2003 年 1 月
ISBN 7-5609-2874-9

Ⅰ. 科…
Ⅱ. ①田…　②许…　③杨…
Ⅲ. 英语-语言读物,生命科学
Ⅳ. H319.4

科技英语阅读系列
**生命科学**　　田传茂　许明武　杨宏　编

策划编辑:梅欣君(Email:Mxj.8@163.com)
责任编辑:张　欣　　封面设计:刘　卉
责任校对:陈元玉　　责任监印:张正林

出版发行:华中科技大学出版社
武昌喻家山　邮编:430074　电话:(027)87545012

录　　排:华中科技大学出版社照排室
印　　刷:华中科技大学印刷厂

开本:787×1092　1/32　　印张:9.875　　字数:190 000
版次:2003 年 1 月第 1 版
印次:2003 年 1 月第 1 次印刷　　印数:1—3 000
ISBN 7-5609-2874-9/H・455　　定价:13.50 元

## 内容提要

根据《全国高等学校英语专业教学大纲》(新大纲)培养复合型外语人才的要求,本书收集了一些能反映生命科学最前沿研究和动向如神经生物学研究、基因研究、器官移植等的最新文章编辑成书,作为外语专业学生了解科技知识的课外读物。编者对文章中的语言和知识难点作注,并配有针对性的练习题。本书也适合生命科学专业的学生或对生命科学感兴趣的文理科学生训练阅读技能和开阔知识视野。

# 前　言

21 世纪是科技的世纪。处于科技最前沿的是外太空探索和生命科学研究(微观世界的探索)。本书的 20 篇文章均来自有关报纸杂志、因特网和百科全书,反映了最近几年世界范围内生命科学基础研究的一些最新成果。对人自身的研究是生命科学探索的核心。因此,本书中有 15 篇文章与人类的生命健康有关,也覆盖了古生物、动植物这些古往今来的地球生命现象。本书的生词罗列较多,目的是尽可能扩大读者的范围。"背景知识简介"是对文章主题思想直接或间接的介绍,以帮助读者更好地理解全文。"注释"是对文章中的重要词汇、短语以及各种语法现象的例解,以帮助读者在阅读欣赏之余提高英语语言知识和技能。"难句翻译"主要选取了文章中一些语法结构复杂、术语密集的长句,通过翻译帮助理解,同时读者可通过英汉对照悟出一些翻译技巧和心得来。"相关专业术语简释"介绍了文章中出现的基本科技术语,以帮助读者了解生命科学领域中的一些基础知识。

总之,编者希望通过自己的一份劳动能帮助广大英语爱好者在语言和科技知识两方面都有所收获。由于编者水平有限,书中错误之处难免,欢迎广大读者批评指正。

编　者

2002 年 11 月

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# 1. Endocrine System—They Might Be Giants

## 生命科学：内分泌系统——他们可能是巨人

*1* The Washington Bullets may not have a chance of taking the NBA championship this June, but the team does have one record clinched: At an incredible 2.3 meters, the Bullets' center (中锋)—Gheorghe Muresan—is the tallest player in the NBA.

*2* How did Muresan get so tall? Could you end up

towering over your friends too? Read on and find out!

**Growing Pains**

*3* Muresan started growing rapidly when he was just 6 years old. He shot up abnormally fast because he has a disorder of the endocrine system—a network of glands that work together to produce chemicals called hormones. Hormones, which travel in your bloodstream to specific organs or tissues, control an amazing range of activities in your body—everything from how hungry you feel to how fast you grow.

*4* "On average, kids grow about two and a half inches a year," explains Dr. Alan Rogol, a pediatrician at the University of Virginia. That happens when your hypothalamus—a combination of nerve and gland tissue in your brain—sends a signal to two glands: your pituitary gland and your thyroid gland. In response, the pituitary produces a chemical called growth hormone and the thyroid makes a hormone called thyroxine. Together, thyroxine and growth hormone instruct cells on the ends of your arm and leg bones to divide. As the cells divide, your bones grow longer and you get taller.

*5* When Muresan was growing up, his pituitary gland probably pumped out 10 to 100 times the normal amount of growth hormone. That's because he has a

tumor (abnormal tissue growth) on his pituitary, which made the gland work overtime.

*6* Usually, the amount of hormone an endocrine gland produces is controlled by a feedback mechanism—the body's on/off switch. Once a tissue, like bone, responds to a hormone, the tissue signals the gland to stop or slow hormone production. When the level of the hormone in the bloodstream drops too low, the tissue signals the gland to restart or increase output.

*7* Muresan's bones sent out signals to stop his growing hormone production, but the tumor in his pituitary gland didn't respond—and he kept growing. By the time he was 10 years old, he was already taller than everyone else in his family. And he still had a growth spurt ahead of him.

## Giant Steps

*8* A growth spurt—which usually lasts 12 to 24 months—is a period during which an average kid sprouts up to 10 to 15 centimeters each year. This speeded up growth rate occurs during puberty—a time when your endocrine system markedly increases its production of the hormones testosterone and estrogen. These hormones signal the pituitary gland to start pumping out two to three times as much growth hormone as it did before puberty.

*9* Girls usually begin their growth spurts when they are between $11\frac{1}{2}$ and $12\frac{1}{2}$ years old, Dr. Rogol says. Most boys start about two years later. Why the big difference? Nobody knows! "The hypothalamus signals the start of puberty," explains Dr. Eric Smith, a pediatrician at Cincinnati's Children's Hospital, "but how it does that isn't understood very well."

*10* One thing is certain: Muresan had a giant growth spurt. By the time he was 14, he stood over 2 meters tall. And he kept on growing—another 25 centimeters before his growth spurt ended! The medical term for growing extremely tall due to an overproduction of growth hormone is gigantism. Not more than one in a million children has this disorder, says Dr. Smith. Doctors could have treated Muresan's gigantism by removing his tumor, but he grew up in a small village in Romania where treatment wasn't available.

*11* Even without treatment, Muresan's growth spurt ended when the hormone estrogen signaled the cells at the end of his leg and arm bones to stop dividing. After this message is sent, humans can't grow any taller no matter how much growth hormone they produce.

*12* A few years ago, doctors removed most of the

tumor in Muresan's pituitary gland. But because a small part of the tumor couldn't be removed, Muresan still produces too much growth hormone. Since his bones can't get any longer, the extra growth hormone is making the bones of his hands, feet, jaws, and the skin on his forehead and feet thicken. This extremely rare adult disorder is called acromegaly.

*13* Another endocrine disorder, called pituitary dwarfism, most frequently occurs when a child's hypothalamus never sends a growth-hormone-releasing signal to the pituitary. If untreated, adults with this disorder are unusually short—sometimes standing just 120 centimeters tall. This condition can be treated with injections of growth hormone, which allow kids to grow a normal height.

## Grow with the Flow

*14* Endocrine disorders like these are very rare, says Dr. Smith, but kids who worry about their growth seem to be everywhere. One reason some kids stress out about their height is the wide range of what's considered "normal" growth, Dr. Smith says. For example, some girls enter puberty—and really start to grow—when they're 8 years old. Other girls are almost 13 before they hit their growth spurt. And boys can start even later—sometimes at age 16.

*15* "That creates some tensions," Dr. Smith says. "Questions come up as to why I'm different from the person sitting next to me in class." But even teens who start their growth spurts late—most often because their parents were also "late bloomers"—usually end up reaching their adult height by the time they graduate from high school.

*16* "Be patient about growing," suggests Dr. Smith. "The most important thing you can do is tolerate people's natural differences—including your own." After all, "short" people make the record books too. Just ask the Charlotte Hornets's point guard Muggsy Bogues. At 1.6 meters, he's the shortest player in the NBA. Even though Bogues is 70 centimeters shorter than Muresan, he scored almost six points more per game last season than the tall man!

### *New Words and Expressions*

clinch [klintʃ] *v.* 钉牢;使……成为确定无疑的
to shoot up (儿童等)长大;长高
endocrine ['endəukrain] *n.* 内分泌
gland [glænd] *n.* [解剖]腺
hormone ['hɔ:məun] *n.* 荷尔蒙;激素
tissue ['tiʃu:] *n.* [生]组织
pediatrician [ˌpi:diə'triʃən] *n.* 儿科医师
Virginia [地名] [美国] 弗吉里亚州

hypothalamus [haipə'θæləməs] *n.* [解剖] 视丘下部
pituitary [pi'tju:itəri] *n.* [解] 垂体
thyroid ['θairɔid] *n.* 甲状腺
thyroxine [θai'rɔksi:n] *n.* [生化]甲状腺素
to pump out 排出
tumor ['tju:mə(r)] *n.* 肿瘤
puberty ['pju:bəti] *n.* 青春期
testosterone [te'stɔstərəun] *n.* [生化] [药]睾丸激素
estrogen ['i:strədʒ(ə)n] *n.* [生化] 雌激素
Cincinnati [地名] [美国]辛辛那提
gigantism [dʒai'gæntizəm] *n.* [医]巨人症
acromegaly [ˌækrəu'megəli] *n.* 肢端肥大症
dwarfism ['dwɔ:fizəm] *n.* 侏儒症
to stress out 紧张;受到……的压力
bloomer ['blu:mə(r)] *n.* 完全成熟的人

**背景知识简介**

在人或其他高等动物体内有些腺(glands)或器官(organs)能够产生激素(hormone)。这些激素能够不通过导管,由血液带到全身,从而调节有机体的生长、发育和生理机能的过程,这就是内分泌过程。如果人体内的生长激素(growth hormones)分泌过多,就会出现巨人症(gigantism),反之,就会产生侏儒症(dwarfism)。

**注释**

1. the National Basketball Association:简称 NBA,全

美职业篮球协会,成立于1949年,由前全美篮球联盟(the National Basketball League, founded in 1937)和前美国篮球协会(the Basketball Association of America, founded in 1946)合并而成。NBA分为两大联盟:东部联盟(Eastern Conference)和西部联盟(Western Conference)。两联盟又各包括两个赛区(Division)。东部联盟包括大西洋赛区(Atlantic Division)和中部赛区(Central Division)。计有波士顿凯尔特人队(Boston Celtics),迈阿密热队(Miami Heat),新泽西网队(New Jersey Nets),纽约尼克斯队(New York Knicks),奥兰多魔术队(Orlando Magic),费城76人队(Philadelphia 76ers),华盛顿子弹队(Washington Bullets)(该七队属于大西洋赛区);亚特兰大鹰队(Atlanta Hawks),夏洛特黄蜂队(Charlotte Hornets),芝加哥公牛队(Chicago Bulls),克利夫兰骑士队(Cleveland Cavaliers),底特律活塞队(Detroit Pistons),印第安纳步行者队(Indiana Pacers),密切沃基雄鹿队(Milwaukee Bucks),多伦多猛龙队(Toronto Raptors)(该八队属于中部赛区)。课文中提到的华盛顿子弹队和夏洛特黄蜂队分属于东部联盟的大西洋赛区和中部赛区。不过,华盛顿子弹队如今已改称华盛顿奇才队(Washington Wizards),其老板之一是著名的篮球飞人迈克尔·乔丹(Michael Jordan)。西部联盟分为中西部赛区(Midwest Division)和太平洋赛区(Pacific Division)。

计有达拉斯小牛队(Dallas Mavericks),丹佛金块队(Denver Nuggets),休斯敦火箭队(Houston Rockets),明尼苏达森林狼队(Minnesota Timberwolves),圣安东尼奥马刺队(San Antonio Spurs),犹他爵士队(Utah Jazz),温哥华灰熊队(Vancouver Grizzlies)(以上七队属于中西部赛区);金州勇士队(Golden State Warriors),洛杉矶湖人队(Los Angeles Lakers),洛杉矶快船队(Los Angeles Clippers),菲尼克斯太阳队(Phoenix Suns),波特兰开拓者队(Portland Trail Blazers),萨克拉门托国王队(Sacramento Kings),西雅图超音速队(Seattle Super Sonics)(以上七队属于太平洋赛区)。NBA 赛程分为常规赛和季后赛,由东西部联盟的冠军争夺 NBA 总冠军(Champion)。在赛季中,还有全明星赛活动(All-Star Game Festivities)。NBA 今天的辉煌是与其总裁大卫·斯特恩(David Stern, NBA Commissioner)分不开的。而"魔术师"约翰逊(Magic Johnson),"大鸟"伯德(Larry Bird)以及罗德曼(Dennis Keith Rodman)是中国球迷非常熟悉的前 NBA 球星。

2. have one record clinched:有一个确定无疑的记录。

此处使用了 have sth. done 句型,意为"要/请/让某人做某事",句型中的 have 可换成 get。例如:

(1)He had his hair cut this morning.

他今天上午理了发。

(2)Zhang Hua is going to get his bicycle repaired this afternoon.

张华打算今天下午把自行车修一修。

3. center:中锋。guard 和 forward 分别是后卫和前锋。

4. end up towering over your friends too:(结果)也比朋友们长得高出一头。

此处有两个动词短语:to end up doing sth.(以……而结束);to tower over(高出)。例如:

(1)If you go on like this, you will end up being put into prison.

如果你继续这样下去,你迟早会蹲监狱。

(2)The high mountains towered over the little town.

高山耸立,俯视小镇。

5. he has a tumor on his pituitary, which made the gland work overtime. 他的垂体上长着一个肿瘤,这使脑垂体腺超时工作。

which 为关系代词,引导一个非限制性定语从句,指代主句表示的整个事情。例如:

(1)She married Joe, which surprised everyone.

她嫁给了乔,这使大家大吃一惊。

(2)He was fined £500. Which we all thought served him right.

他被罚款 500 英镑。我们都认为他活该。

[例(2)中的 Which 指代前面的整个句子。主从句间用句点分隔,为非正式文体。]