

通信科技英语

文选

南京大学外文系公共英语教研室编



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通俗科技英语文选

第三辑

南京大学外文系公共英语教研室编

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Crossing the Sea

People must live where there is water.① They must have water to drink.

A long time ago, people found that they could also swim in the water. They found that they could move even faster in the water if they made rafts and boats and used paddles.②

So, when people built their settlements, they built them near lakes, rivers and seas. They could travel more easily from one place to another by sea than they could by land.

At first, they did not travel great distances by sea. Their boats were not very strong. They tipped over easily in storms. So they sailed only where they were not very far from land.

But people began to trade more and more with each other. The people who lived in Europe wanted things that came from India and China by land. It was a long, hard trip. It was very dangerous, too.

But travel by sea became safer. So people began to think of getting to India and China by sea. Why couldn't they get there by sailing west across the Atlantic Ocean? Perhaps it would take less time.

Christopher Columbus was one of the men who thought he could reach India by sailing west. After 40 days at sea, he did reach land. But it was not India. He had

found America.

A few years later, people did reach India and China by sea.

Thirty years later a sailing ship travelled round the earth for the first time. The captain of the ship was a man named Magellan. On the way he found a new ocean. He called it the Pacific Ocean. The word "pacific" means quiet, and the new ocean was calm when he first saw it.

Since the time of Columbus and Magellan, men have built great ships that can travel very fast. The ships of today do not have sails. They get their power from coal, oil or the atom.

Men have even built ships that travel under the sea. Such ships are called submarines. Submarines with atomic power can stay under the water for more than 80 days. They can travel under the ice of the Arctic and Antarctic Oceans. They can travel round the world, under the sea, without stopping.

词 汇

raft [rɑ:ft] *n.* 木筏
paddle ['pædl] *n.* 桨
settlement ['setlmənt] *n.* 村落
tip [tip] *v.* 使翻倒
sail [seil] *v.* 航行 *n.* 帆
trade [treid] *v.* 经商
India ['indjə] *n.* 印度
Atlantic Ocean [ət'læntik] (地名) 大西洋
Christopher Columbus ['kristəfə
kə'ləmbəs] (人名) 克利斯托
夫·哥伦布

captain ['kæptin] *n.* 船长
Pacific Ocean [pə'sifik] (地名)
太平洋
Magellan [mə'gelən] (人名) 麦
哲伦
time [taim] *n.* 时代
submarine [səbmə'ri:n] *n.* 潜
水艇
Arctic ['ɑ:ktik] *a.* 北极的
Arctic Ocean 北冰洋
Antarctic [æn'tɑ:ktik] *a.* 南极的
Antarctic Ocean 南冰洋

注 释

- ① People must live where there is water. 本句可译为: 人们必须生活在有水的地方。
- ② They found ... paddles. 本句为复合句。that ... water 为宾语从句, 其中 if ... paddles 为条件状语从句。本句可译为: 他们发现倘若他们编了木筏, 造了船, 并且用上了桨, 他们在水上会行动得更快。

Movements of the Earth's Water

For a long time many persons thought that the changing shape of the moon affected their health, their crops, and the patterns of the weather. There is no scientific proof for any of these beliefs, but the moon does have other effects on the earth.

Galileo worked out some of our first ideas about the force that attracts objects to the earth. Many persons call this the earth's gravity. Later Sir Isaac Newton used this idea to explain some of the forces in the solar system. Astronomers now recognize that all bodies in space attract one another. Gravity is a word used for the special gravitational attraction that the earth has for other objects. This force which attracts all objects to one another is called gravitation.

The moon's gravitational force affects the earth, and so does that of the sun.① Careful measurements have shown that the earth's crust bulges slightly toward the

moon. The fluids on the earth, however, react to the gravitational pull much more noticeably; the pull of the moon tends to draw the waters of the earth into a bulge. The heaping up of water on the moonside of the earth is familiar if you live along the coast. You find that high tide occurs when the moon is the highest in the sky. The tide follows the moon around the earth. You might therefore expect the moon's gravitational force to cause one high tide in each 24-hour day. Opposite the high tide, then, you might expect to find a low tide caused by the water moving around the earth toward the moon. But except on a few parts of the earth, this is not what happens. It is necessary to examine the earth and the moon in relation to the sun.

Remember that as the earth spins (rotates) on its axis, it also revolves around the sun, and the moon revolves with it. Let's think of the earth and moon as a turning dumbbell, with one end of the dumbbell smaller than the other. The dumbbell circles around the sun as if both the earth and the moon were tied together.② When the moon end of the dumbbell swings between the sun and the earth, the gravitation of the sun and the moon both pull together on the same side of the earth; more water is therefore pulled in that direction. The oceanographer's records show that the highest tides occur at this time — he calls them the spring tides. The name of the tides has nothing to do with the spring season at all. As the moon revolves around the earth in about 29 days, it is between the earth and the sun for several days during the month. Then these high-high tides will occur on these days.

When the moon is in its first and last quarter, the dumbbell pair is turned so that the gravitational pull of the moon is at right angles to the pull of the sun. The water of the ocean is then spread more evenly. It is, however, pulled more toward the moon than the sun. The oceanographer calls these lower tides neap tides. They occur about one week after the spring tide. Can you explain why they occur when they do?

When the earth-moon pair swings around so that the moon is on the side of the earth opposite the sun, you see the bright full moon. Then the gravitational pull of the moon causes a bulge on one side and the gravitational pull of the sun causes a bulge on the other. During one 24-hour rotation of the earth, a coastal location should have two high tides and two low tides. This is true unless the shape, size, or position of the shore line and the depth of the water have an effect on the tides.③

词 汇

affect [ə'fekt] *v.* 影响

belief [bi'li:f] *n.* 信念, 相信

Galileo [ˌgæli'li:(ə)n] (人名) 伽利略

astronomer [əs'trɒnəmə] *n.* 天文学家

recognize ['rekəɡnaiz] *v.* 认识, 承认

gravitation [ˌgrævi'teɪʃən] *n.*

【物】万有引力, 引力作用

crust [krast] *n.* 【地】地壳

bulge [baldʒ] *v., n.* 凸出, 膨胀

slightly ['slaitli] *ad.* 轻微地

noticeably ['nəutisəbli] *ad.* 显著的

coast [kəʊst] *n.* 海岸

spin [spin] *v.* 旋转

dumbbell ['dʌmbel] *n.* 哑铃

tie [tai] *v.* 系, 拴

swing [swɪŋ] *v.* 摆动

oceanographer [ˌəʊʃjə'nɒɡrəfə]

n. 海洋学专家

record ['rekɔ:d] *n.* 记载, 纪录

tide [taɪd] *n.* 潮

spring tide 大潮
evenly ['i:vənli] *ad.* 均匀地, 平

稳地
neap [ni:p] *n.* 小潮, 最低潮

短 语

(to) work out 作出
(to) tend to 倾向于
in relation to 涉及, 关于

(to) have nothing to do with
与...无关

注 释

- ① The moon's gravitational force ... that of the sun. 像本句这样, 若前后两句都是肯定句, 而且句子结构也相同, 后一句则用 *so* 开始, 并要形成部分倒装。后半句中的 *that* 代替 *gravitational force*。全句可译为: 月球的引力影响地球, 太阳引力也如此。
- ② ... as if both the earth and the moon were tied together. 由 *as if* 引导的方式状语从句中, 谓语动词要用虚拟形式。所以这儿用了 *were tied*。
- ③ This is true unless... have an effect on the tides. 本句可译为: 假如海岸线的形状、长短或位置以及水的深度对海潮没有影响的话, 这一情况就是真实的。

Helicopters

About four hundred years ago, man thought of a flying machine and drew a picture of it. It was like a helicopter in some ways. But the people of that time did not know about the science of flying. So the man's idea was just a picture on a piece of paper.

About one hundred and fifty years ago, some men

made models of flying machines. Those models could fly in the air, though they could not carry a man.

About 1930, some people made a big helicopter. It could carry more than one man, but it could not stay still in the air very long. Then other people made another kind of helicopter. It carried only one man, but it could fly for many hours.

Today there are many kinds of helicopters. Each of them has two rotors. One of the newest helicopters is very small. It can be put in the back of a car.

People in the rough country cannot always use their cars to go to the airport. Some of them have helicopters of their own, though they are not always rich people. They go flying to the airport in a helicopter, get on a plane, and take off again.①

A helicopter is sometimes more useful than a big plane. When it takes off, it goes straight up. When it lands, it comes straight down. It needs only a small place for both taking off and landing.②

It can stay still just a few feet above the ground, but a big plane cannot.③

We can do a lot of things with helicopters. When a tall building is on fire, you will see a helicopter coming down to pick up the people on top of it.④

Helicopters make many kinds of work very easy.

Some people use them when they make maps. They fly over the ground and take pictures from the air. Other people use them when they grow wheat or corn. They seed from the air. In rough countries, it is sometimes difficult to use big planes.⑤ Only helicopters can be used.

If a man becomes very sick on a small island, a helicopter will be sent there. It will take him to a big city. If the people on the island need food, a helicopter will come flying to help them.

In 1969 the helicopter played an important part when the first men on the moon came back to the earth. When they came down in the sea, they were picked up by a helicopter. People all over the world watched the scene on television.

The helicopter is so useful that some day it may take the place of a car and a train.⑥ Then people will go to work in their helicopters. The helicopter is a great success of science.

词 汇

helicopter ['helikɒptə] *n.* 直升飞机

draw [drɔ:] (drew [dru:], drawn [drɔ:n]) *v.* 画, 绘制

piece [pi:s] *n.* 片, (纸) 张

still [stil] *a.* 静止的

rotor ['rəʊtə] *n.* 水平旋翼

rough [raf] *a.* 地势崎岖的

airport ['seɪpɔ:t] *n.* 飞机场

straight [streit] *ad.* 直接地, 一直地

land [lænd] *v.* 着陆, 降落

foot [fʊt] ([复] feet [fi:t]) *n.* 英尺; 脚

pick [pik] *v.* 采摘, 挑选

grow [grəʊ] (grew [gru:], grown [grəʊn]) *v.* 种植

wheat [wi:t] *n.* 小麦

corn [kɔ:n] *n.* 玉米

seed [si:d] *v.* 播种, 撒种子

sick [sik] *a.* 生病的

send [send] (sent [sent]) *v.* 派送

island ['aɪlənd] *n.* 岛

watch [wɒtʃ] *v.* 观看

scene [si:n] *n.* 景况; 事件

television ['teli:vɪʒən] *n.* 电视

some [sʌm] *a.* 某一(后接可数的单数名词)

短 语

(to) *think of* 考虑, 想象

in some ways 有几分, 在某些方面

(to) *stay still* 停留不动

(to) *get on* 上(车、飞机)

(to) *take off* 起飞

(to) *be on fire* 着火

(to) *pick up* 收载; (车辆等)中途搭(人)

(to) *take pictures* 照相, 摄影

(to) *play a part* 起...作用

(to) *take the place of* 代替, 取代

注 释

- ① They go flying to the airport in a helicopter, get on a plane, and take off again. 这句中的 flying 是分词, 作状语, 说明谓语动词 go 的方式。本文后面还有一句话: a helicopter will come flying to help them. 其中的 flying 起着相同的作用。本句可译为: 他们乘坐直升飞机飞到机场, 登上飞机, 再次起飞。
- ② It needs only a small place for both taking off and landing. 句中的介词短语 for both taking off and landing 是修饰 place 的定语, 其中的 both ... and 是起连接作用的词组, taking off 和 landing 是动名词, 作 for 的宾语。本句可译为: 它只需要一小块地方进行起飞或降落。
- ③ It can stay still just a few feet above the ground, but a big plane cannot. 这是并列复合句, 后面的分句省略了与前句相同的部份, 写全了应是: but a big plane cannot stay still just a few feet about the ground. 句中的副词 just 用于加强语气。本句可译为: 它可以在地面上空几英尺的地方停留不动, 而大飞机则不能。
- ④ When a tall building is on fire, you will see a helicopter coming down to pick up the people on top of it. 这是主从复合句, 主句中的 coming ... it 是现在分词短语, 作宾语补足语, 其中的 it 代表 building. 本句可译为: 当某座高楼着火时, 你就

会看到直升飞机降下来把屋顶上的人运走。

- ⑤ In rough countries, it is sometimes difficult to use big planes. 这句中的 it 是形式主语, 其真实主语是后面的不定式短语 to use big planes. 本句可译为: 在地势崎岖的国家, 有时很难使用大飞机。
- ⑥ The helicopter is so useful that some day it may take the place of a car and a train. 这是主从复合句, 主句在前, 从句在后。"so ... that" 是起连接作用的词组, 引导结果状语从句, 表示“如此...以致于”的意思。本句可译为: 直升飞机有那么多的用途, 有一天它可能取代汽车和火车。

The Ecosystem Concept

One of the most important concepts of science is the ecosystem concept. It is the base upon which you will build your understanding of the complex but exciting interactions that occur in terrestrial ecosystems.①

A naturally occurring group of organisms (plants, animals, and protista) living in a particular habitat, depending on and sustaining each other, is termed a BIOTIC (living) COMMUNITY.② Such a community cannot exist in a vacuum. It is influenced by and dependent upon ABIOTIC (non-living) FACTORS [such as sunlight, soil, topography, wind, temperature, moisture, and minerals. The interaction of biotic and abiotic factors creates what is called an ECOSYSTEM.③ A forest is an ecosystem as is a pond, or a meadow.④ So intricately knit is the web

of interacting factors within an ecosystem that should one vital strand be broken, the ecosystem may be destroyed.⑤

Consider how complex an ecosystem must be that has hundreds of different plant and animal species!⑥ Suppose, for example, that a lumber company completely strips of forested area of its large trees. What effects will this have on the forest ecosystem? The trees will no longer add humus to the soil since they will no longer be dropping leaves onto the ground. Snails, earthworms, and other animals that thrive in the leaf litter will decrease in numbers and, perhaps, vanish completely. Animals that prey on these organisms will be affected. Soil erosion may occur since the leaf canopy is no longer present to absorb the energy of a heavy rainfall. If the soil erodes, many plant species will disappear. The animals that eat these plants will move away or die of starvation. Plants like mushrooms and ferns that require abundant shade and moisture will likely die. Broad-leafed plants that cannot live in direct sunlight too will be affected.

On the positive side, many species of plants that require intense sunlight will now be able to grow in the area. Grasses and other sun-tolerant plants will gradually become established. Shrubs and tree species that could not grow in the shade of the forest will appear. New insect populations will be established, and new bird and mammal species will make their homes there. But the original ecosystem is gone, perhaps forever.

The chain of events that occurs when one factor in an ecosystem is altered is long and involved.⑦ But it is certain to occur. Try now to imagine further changes that

would occur in the forest that has been lumbered. Do you think that neighboring ecosystems will be affected? Would a nearby stream, pond, or meadow experience any changes as a result of lumbering in the forest?

The answer to the last question is "Yes." Ecologists have sufficient knowledge of the structure and functioning of ecosystems to predict disasters like soil erosion, depletion of soil minerals on farmland, and flooding due to poor land management.

词 汇

ecosystem [ˌi:kə'sistəm] *n.* 生态系统

concept ['kɒnsept] *n.* 概念

interaction [intər'ækʃən] *n.* 相互作用

occur [ə'kɜ:] *v.* 发生

terrestrial [ti'restriəl] *a.* 地球上的

organism ['ɔ:gənizəm] *n.* 有机体

protista ['prəutistə] *n.* 原生物

habitat ['hæbitæt] *n.* 住处, 聚集处

sustain [səs'tein] *v.* 供养, 维持

biotic [bai'ɒtik] *a.* 生物的, 生命的

community [kə'mju:niti] *n.* 【生物】群落

vacuum ['vækjuəm] *n.* 真空

influence ['influəns] *n.* 影响

abiotic [,æbai'ɒtik] *a.* 无生命的

factor ['fæktə] *n.* 因素

topography [tə'pɒgrəfi] *n.* 地形

meadow ['medəu] *n.* 牧草地

intricately ['intrikitli] *ad.* 错综地, 复杂地

knit [nit] *v.* 结, 使紧密

web [web] *n.* 网

interact [intər'ækt] *v.* 互相作用

vital ['vaitl] *a.* 重要的

strand [strænd] *n.* (线等)股, 一个组成部份

species ['spi:ʃi:z] *n.* 种类

lumber ['lʌmbə] *n.* 木材 *v.* 采伐树木

company ['kʌmpəni] *n.* 公司

strip [stri:p] *v.* 剥光, 砍去

humus ['hju:məs] *n.* 腐殖质

earthworm ['ə:θwɔ:m] *n.* 蚯蚓

thrive [θraiv] *v.* 兴旺

litter ['litə] *n.* 树叶, 落叶层

decrease [di'kri:s] v. 减少
 vanish ['væniʃ] v. 消失
 prey [prei] v. (猛兽等) 捕食
 affect [ə'fekt] v. 影响
 erosion [i'rəʊʃən] n. 腐蚀
 canopy ['kænəpi] v. (树) 冠
 absorb [əb'sɔ:b] v. 吸收
 erode [i'rəʊd] v. 腐蚀
 mushroom ['mʌʃrʊm] n. 菌类植物
 fern [fə:n] n. 【植物】蕨
 abundant [ə'bandənt] a. 充分的
 shade [ʃeid] n. 树荫
 broad-leaved ['brɔ:d 'li:vɔ] a. 阔叶的

sun-tolerant ['sʌn 'tɒlərənt] a.
 耐阳光的
 shrub [ʃrʌb] n. 灌木
 insect ['insekt] n. 昆虫
 population [pɒpjʊ'leɪʃən] n. 总数
 mammal ['mæməl] n. 哺乳动物
 chain [tʃein] n. 一连串, 一系列
 alter ['ɔ:lteɪ] v. 改变
 involved [in'vɒlvɪd] a. 复杂的
 experience [iks'piəriəns] v. 经历, 遭受
 predict [pri'dikt] v. 预言
 sufficient [sə'fɪʃənt] a. 足够的
 disaster [di'zɑ:stə] n. 灾难
 depletion [di'pli:ʃən] n. 耗尽

短 语

(to) be dependent on (upon) 依赖于...
 (to) have effect(s) on 对...有影响
 no longer 不再
 in number 总共

(to) move away 离开
 (to) die of starvation 饿死
 on the positive side 积极的一面
 after all 毕竟
 in fact 事实上
 due to 由于...

注 释

- ① It is the base ... ecosystems. 本句为复合句。主句是 It ... base, upon which ... interactions 为定语从句, 修饰主句中的 base, that ... ecosystems 为另一定语从句, 修饰 interactions。译: 它是你要了解发生在生态系统中的复杂而又激动人心的相互作用的**基础**。
- ② A naturally occurring group of organisms ... COMMUNITY. 本句有三个分词短语: living in a particular habitat 和 depend-