

生物专业英语文选

南京大学外文系公共英语教研室编

商 务 印 书 馆

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1984 年 · 北京

SHÈNGWŪ ZHUĀNYÈ YĪNGYŪ WÉN XUǎN

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商 务 印 书 馆 出 版

(北京王府井大街36号)

新华书店北京发行所发行

北京第二新华印刷厂印刷

统一书号: 9017·1382

1984年7月第1版

开本 787×1092 1/32

1934年7月北京第1次印刷

字数 184 千

印数 11,900 册

印张 7 2/3

定价: 0.80 元

前 言

为帮助广大生物学工作者、学习者进一步提高英语阅读能力，我们编辑了这本《生物专业英语文选》。在本书所选的课文中，有关动、植物学等学科的基本英语专业词汇、常见句型、文体均得到了不同程度的反映。此外，每篇课文后还附有词汇表和词组，对文章中一些常用句型和长难句的结构、理解上应注意的地方也都一一加了注释，书后并附有汉语译文供读者对照参考。文中凡属动植物拉丁文学名均用斜体表明。为提高读者阅读兴趣，入选文章题材丰富，内容生动，带有一定的科学趣味性。

本书由夏国芳和何仲文同志合编。在编写过程中承南京大学生物系多位教师热情指教，大力协助，最后又蒙南京大学生物系朱洪文教授和中国大百科全书出版社郑伯承同志审校，编者谨在此一并表示衷心感谢。

由于现代科学技术的突飞猛进，生物科学在近几十年来有了迅速的发展，而编者的专业知识和语言水平却很有限，书中错误不当之处欢迎广大读者不吝指教。

南京大学外文系公共英语教研室

本书所用语法术语略语表

a.	adjective	形容词
ad.	adverb	副词
conj.	conjunction	连词
n.	noun	名词
pl.	plural	复数
sing.	singular	单数
num.	numeral	数词
prep.	preposition	介词
v.	verb	动词

CONTENTS

1. The Science of Biology	1
2. Man and the Ecosystem.....	5
3. Types of Plants (I)	8
4. Types of Plants (II)	12
5. Development of Root Systems	15
6. Stems	18
7. Leaves	21
8. Photosynthesis — Ultimate Energy Source	25
9. The Walnut Tree and Allelopathy	28
10. The Blue-green Algae	32
11. The Conifers	37
12. Mushroom and the “Fairy Ring”.....	40
13. Ginkgo	43
14. Varieties among Flowers	49
15. Plants that Eat Insects	54
16. Viruses and Plant Diseases.....	59
17. The Discovery of Bacteria	64
18. Amoeba	69
19. Ciliates — Paramecium	74
20. A Simple Sponge — Scypha	80
21. Beetles	85
22. Means of Defense of Insects	90
23. Reptiles.....	95
24. Coyote — Gray Wolf.....	99
25. Migration of Birds	103

26. Black Bear	108
27. The Apes	113
28. Sperm Whale	119
29. Symbiosis of the Crab and the Anemone.....	123
30. Classification of Animals	128
31. Characteristics of Living Matter	135
32. The Difference between Animals and Plants.....	139
33. Two Kingdoms or Five?	143
34. Aging	147
35. The Darwin - Wallace Theory of Natural Selection.....	151
36. Evolution, Genetics and the Environment	156
37. The Work of Mendel	160
38. Where Are the Genes?	165
39. The Biological Clock	170
40. Water Pollution by Sewage.....	174
附: 参考译文	179

1. THE SCIENCE OF BIOLOGY

Biology is that part of science dealing with the matter and energy which is, or was, a part of a living system. The word comes from the Greek *bios*, which means "life," and *logos*, which means "word" or "thought." In short, biology is a body of knowledge of living systems. We often add adjectives or the prefix or suffix *bios* to describe narrower segments of the larger subject of biology: molecular biology, developmental biology, biochemistry, symbiosis, and so on.

Biology is both an old and a vast science. Our earliest recorded biology comes from the ancient Greeks, but even prehistoric man left behind him in his caves beautiful drawings of animals.^① He seems to have had a sensitive awareness of proportion, anatomy, and motion. When man existed principally as a hunter, he practiced biology of a sort as he sought out his food, for he had to know the ways of the hunted animal, the ways of those animals that would prey upon him, and the sources of edible plants. When he turned from his nomad life to a more stable, agricultural existence, he had to have a greater knowledge of plants and animals before he could domesticate them sufficiently well to provide himself with a ready source of food.^② And as man domesticated these organisms, so did they domesticate him, for he had to adapt himself to their ways of life as well as adapting them to his own.^③ It is from these early beginnings that biology had its start.

The vastness of biology today can be seen by the various

subdivisions into which the science has been broken. A look at any natural habitat will impress you with the great diversity of living forms, which range from trees and large animals to organisms of microscopic size. Classification of organisms into convenient groups that show common similarities is taxonomy. Investigation of structure is anatomy; of function, physiology; of the details of cells, cytology; of inheritance from one generation to the next, genetics; of the relation of organisms to their environment, ecology; of disease, pathology. Biology, too, can be divided according to the particular group of organisms being studied: entomology (insects), malacology (shells), mycology (molds and mushrooms), bacteriology, virology, and botany (plants), and zoology (animals). The list can be greatly lengthened, depending on how narrowly one wishes to limit a given area of study.④

词 汇

science ['saɪəns] *n.* 科学
biology [baɪ'ɒlədʒi] *n.* 生物学
Greek [ɡri:k] *n.* 希腊语
prefix ['pri:fiks] *n.* 前缀; 词头
suffix ['sʌfiks] *n.* 后缀; 词尾
describe [dɪs'kraɪb] *v.* 描述; 形容
segment ['segmənt] *n.* 部分; 部门
molecular [məu'lekjulə] *a.* 分子的
developmental [dɪ'veləp'mentl] *a.* 发育的; 发展的
biochemistry ['baɪəu'kemɪstri] *n.* 生物化学
symbiosis [ˌsɪmbaɪ'əʊsɪs] *n.* 共生 (现象)
ancient ['eɪnfənt] *a.* 古老的; 古代的
prehistoric ['pri:hɪs'tɒrɪk] *a.* 史前

的
drawing ['drɔ:ɪŋ] *n.* 图画
sensitive ['sensɪtɪv] *a.* 敏感的; 容易感受的
awareness [ə'weənɪs] *n.* 意识; 认识
proportion [prə'pɔ:ʃən] *n.* 比例; 比率
anatomy [ə'nætəmi] *n.* 解剖(学)
motion ['məʊʃən] *n.* (物体的)运动
principally ['prɪnsəpəli] *ad.* 主要地; 首要地
practice ['præktɪs] *v.* 应用; 实施 (=practise <英>)
edible ['edɪbl] *a.* 可食用的
nomad ['nɒməd] *a.* 游牧的; 流浪的
stable ['steɪbl] *a.* 稳定的; 不变的

agricultural [ˌæɡriˈkʌltʃərəl] *a.* 农业的
domesticate [dəˈmestikeɪt] *v.* 驯化 (动植物)
subdivision [ˈsʌbdɪˌvɪʒən] *n.* 由再分分成的部分
habitat [ˈhæbitæt] *n.* 生境; (动物的) 栖息地; (植物的) 产地
diversity [daɪˈvɜːsɪti] *n.* 多样性
classification [ˌklæsɪfɪˈkeɪʃən] *n.* 分类
convenient [kənˈviːnjənt] *a.* 合适的; 方便的
similarity [ˌsɪmiˈlærɪti] *n.* (*pl.*) 类似点
taxonomy [tækˈsɒnəmi] *n.* 分类学
investigation [ɪnˌvestɪˈɡeɪʃən] *n.* 调查研究
structure [ˈstrʌktʃə] *n.* 结构
physiology [ˌfɪziˈɒlədʒi] *n.* 生理学
cytology [saɪˈtɒlədʒi] *n.* 细胞学
inheritance [ɪnˈherɪtəns] *n.* 遗传

genetics [dʒiˈnetɪks] *n.* 遗传学
ecology [i(:)ˈkɒlədʒi] *n.* 生态学
disease [diˈziːz] *n.* 疾病
pathology [pəˈθɒlədʒi] *n.* 病理学
particular [pəˈtɪkjələ] *a.* 特定的; 各个的
entomology [entsəˈmɒlədʒi] *n.* 昆虫学
malacology [ˌmæləˈkɒlədʒi] *n.* 软体动物学
mycology [maɪˈkɒlədʒi] *n.* 真菌学
mold [məʊld] *n.* 霉菌 (= mould <英>)
mushroom [ˈmʌʃrʊm] *n.* 蘑菇; 菌类植物
bacteriology [bækˌtɪəriˈɒlədʒi] *n.* 细菌学
virology [ˌvaɪəˈrɒlədʒi] *n.* 病毒学
botany [ˈbɒtəni] *n.* 植物学
zoology [zəʊˈɒlədʒi] *n.* 动物学
lengthen [ˈleŋθən] *v.* 使延长; 变长

词 组

(to) deal with 涉及; 论述
 in short 简而言之; 总之
 a body of 一门(学问); 一批; 一片
 and so on 等等
 of a sort 勉强称得上

(to) provide ... with... 为...提供...
 (to) adapt oneself to 使自己适应...
 (to) range from ... to ... 在(从)...
 (到)...的范围内变化
 according to 根据

注 释

- ① but even prehistoric man left behind him in his caves beautiful drawings of animals. beautiful drawings of animals 是动词 left 的宾语; 这一分句相当于 but even prehistoric man left beautiful drawings of animals behind him in his caves.
- ② When he turned from his nomad life to a more stable, agricultural

existence, he had to have a greater knowledge of plants and animals before he ...: when 引导的是时间状语从句; a greater knowledge 是“更多的了解”之意; before 在本句中宜译成“...才能...”。例如: We must study hard before we can effectively serve the people. 只有努力学习, 我们才能有效地为人民服务。

- ③ And as man domesticated these organisms, so did they domesticate him, for he had to adapt himself to their ways of life as well as adapting them to his own. “so + be (或助动词) + 主语”结构的倒装句常用以表示和前面句子相同的意思, 如: They are going to school, so are we. 他们上学去, 我们也是(上学去)。本句中的 did 表示这是一个过去时态的倒装句。for 引导的是并列句, 其中 as well as 作“和...一样”解。其中整个分句可直译成: “他(指人类)必须使自己适应它们的(指动植物的)生活方式, 和使它们适应他自己的(生活方式)一样。”
- ④ The list can be greatly lengthened, depending on how narrowly one wishes to limit a given area of study. depending on ... 是现在分词短语作状语, 意为“视...而定”; how 引导的从句是 depend on 的宾语; narrowly 修饰 limit, 但因为用 how 引导的从句中往往把有关的副词或形容词提前放在 how 之后, 因此它的位置就提前了。

2. MAN AND THE ECOSYSTEM

Man has been a distinct species of mammal for at least 300,000 years. Today he is the dominant organism over most areas of the earth and the total population is more than 3,500 million. This number is at present increasing by about 60 million every year,^① and if this rate of increase continues, then by the year 2000 there will be about 7,000 million people on earth. Unfortunately, man is quickly damaging and destroying large parts of the ecosystem and we must never forget that man, like all other organisms, is completely dependent upon the flow of energy through the ecosystem and upon the continuous recycling of nutrients within the ecosystem.

Two of the reasons for man's success are his lack of special adaptations for life in a narrow range of conditions and his ability to modify his environment so that life becomes easier and less dangerous. The individual can adapt himself to life in many different places, with a different climate, different food, and different problems of survival. He can change his environment by building houses, by lighting fires, and by wearing clothes, and in many other ways. Because he is so adaptable and so easily able to modify the environment, man has been able to spread himself through most areas of the land surface of his world.

The need to produce or catch more and more food leads man to change and destroy more and more parts of the ecosystem. Thus, forests are cut down and replaced by food plants,

food webs are disturbed by too much hunting, and the habitats of many organisms disappear. In some cases the population of a species becomes so reduced that there is a real danger of extinction. For example, in the last 50 years well over 100 species of mammals alone are seriously threatened by extinction.②

Man also affects the ecosystem by replacing large areas that contain living communities with towns and cities, which contain relatively little life.③ Doing this also involves using up many natural resources, very frequently without in any way replacing them. For example, when man cuts down trees to obtain wood to use as fuel or to make furniture or paper, he not only damages or destroys a complex living community of organisms, but also removes from the nutrient cycles many types of nutrient. In fact, man seems to be the only organism which can do permanent damage to the ecosystem. He is certainly the only one whose waste products affect the environment in the way that his do.④

词 汇

ecosystem [i:kə'sistəm] *n.* 生态系
(统)

distinct [dis'tɪŋkt] *a.* 独特的; 明显的

dominant ['dɒmɪnənt] *a.* 占优势的; 统治的; 支配的

unfortunately [ʌn'fɔ:tʃənɪtli] *ad.* 不幸地; 使人遗憾地

damage ['dæmɪdʒ] *v.* 损害; 毁坏

destroy [dis'trɔɪ] *v.* 破坏; 消灭

recycle ['ri:saɪkl] *n., v.* (使)再循环

nutrient ['nju:triənt] *n.* 营养品; 食

物

lack [læk] *n.* 缺乏; 不足

adaptation [ædæp'teɪʃən] *n.* 适应; 适合; 适应性的变化

modify ['mɒdɪfaɪ] *v.* 修改; 更改

web [web] *n.* 网

food ~ 食物网

disturb [dis'tɜ:b] *v.* 扰乱; 干扰

extinction [ɪks'tɪŋkʃən] *n.* 灭绝; 消灭

threaten ['θreɪtn] *v.* 威胁; 似将发生

affect [ə'fekt] *v.* 影响

replace [ri'pleis] *v.* 取代; 接替; 更换
community [kə'mju:niti] *n.* 群落;
 社会; 团体
frequently ['fri:kwəntli] *ad.* 经常地
obtain [əb'tein] *v.* 获得; 得到
complex ['kɒmpleks] *a.* 复杂的; 综

合的; 合成的
remove [ri'mu:v] *v.* 去掉; 脱掉; 消除
permanent ['pə:mənənt] *a.* 永久的;
 持久的
waste [weist] *a.* 废弃的; 多余的

词 组

at least 至少
at present 目前; 现在
on earth 在世界上
(to be) dependent upon (on)

依赖[靠]...
(to) cut down 砍倒
(to) use up 耗尽; 用完

注 释

- ① This number is at present increasing by about 60 million every year ...: 英语中表示“增加”(或减少)的速度常通过介词 *by* 表示, 本句的意思就是“...以每年约六千万人的速度增长着”。
- ② ..., in the last 50 years well over 100 species of mammals ...: 此处的 *well* 相当于 *to a considerable extent*, 故 *well over 100 species* 应理解为“远远(或大大)超过一百种以上的...”。另如: *He must be well over forty.* 他肯定已四十好几(岁)了。
- ③ *Man also affects the ecosystem by replacing large areas that contain living communities with towns and cities, which contain relatively little life.* “*by replacing ...*”这一短语修饰动词 *affect*, 说明通过什么样的方式或手段来“影响”; *by* 引导的短语中有两个定语从句, 一个用 *that* 引导, 修饰 *large areas*, 另一个用 *which* 引导, 修饰 *towns and cities*。
- ④ *He is certainly the only one whose waste products affect the environment in the way that his do.* 本句中的 *He* 指上句中的 *man*, 即人类; *one* 指上句中的 *organism*; 句末的 *in the way* 作状语修饰 *affect*; *that his do* 是定语从句, 修饰 *the way*, *his* 代替句中出現过的 *whose waste products*, *do* 代替 *affect*, 因此句末的 *in the way that his do* 相当于 *in the way that his waste products affect*, 可直译为“以他(目前)产生的废物影响(环境)的方式影响环境”。

3. TYPES OF PLANTS (I)

Plants are very important living things. Life could not go on if there were no plants.① This is because plants can make food from air, water and sunlight. Animals and Man cannot make food from air, water and sunlight. Animals get their food by eating plants and animals too. Therefore, animals and man need plants in order to live. This is why we find that there are so many plants around us.

If you look carefully at the plants around you, you will find that there are many types of plants. Some plants are large while others are small. Most plants are green. There are two main types of plants: flowering plants and non-flowering plants.

Flowering plants have roots, stems, leaves, flowers and fruits. Almost all the trees around us are flowering plants. You can probably recognize some plants from their flowers or their fruits.

Non-flowering plants do not grow flowers. They include coniferous trees, mosses, liverworts, algae and fungi. You cannot see many non-flowering plants around you.

Flowering Plants

Flowers are useful to us in many ways. One of them is that they help us to recognize the different types of plants which we find growing all around us. Flowers have different shapes, sizes and colours. Each flower is attached to the stem by a flower stalk. In some plants, the flowers grow singly while in others the flowers may grow together in a bunch.

Most flowers have four parts — petals, sepals, male parts and female parts.

The Petals

When you look at a flower you usually notice the petals first because they are brightly coloured. Different plants have petals of different colours. They attract insects or birds.

The Sepals

Below the petals, on the outside of the flower, are the sepals. They usually look like small leaves. They protect the flower bud.

The Male Parts

The stamens are the male parts of the flower. Some flowers have many small stamens while others have only a few.^② Each stamen has two parts — the filament and the anther. The anther, when ripe, produces a yellowish powder called pollen.^③ Each pollen grain contains a male cell which can fertilize a female egg cell.

The Female Parts

The female parts are found in the centre of the flower. There are three parts — the stigma, the style and the ovary. The ovary is a swelling at the base of the flower. Inside the ovary there are tiny ovules. Each ovule contains an egg cell. The style is a long thin stalk arising from the ovary. At the tip of the style is the hairy, sticky stigma.^④

Flowers with both male and female parts are called bisexual flowers. Examples of plants with bisexual flowers are the tomato, capsicum, convolvulus, cow pea and lily plants. Some flowers have stamens only. These flowers are called male flowers. Some only have the pistil and so they are called the female flowers. The papaya, pumpkin, cucumber and waterme-

lon are examples of plants where the male and female parts are on separate flowers.⑤

词 汇

type [taɪp] *n.* 种类
plant [plɑ:nt] *n.* 植物
sunlight ['sʌnlait] *n.* 阳光; 日光
therefore ['ðeəfɔ:] *ad.* 所以; 因此
flowering ['flaʊərɪŋ] *a.* 有花的; 显花的
non-flowering [nɒn'flaʊərɪŋ] *a.* 无花的; 隐花的
stem [stem] *n.* 茎
leaf [li:f] (*pl.* leaves) *n.* 叶
fruit [fru:t] *n.* 果实
probably ['prɒbəbli] *ad.* 很可能; 大概; 或许
recognize ['rekəɡnaɪz] *v.* 辨认; 认出; 认识
include [in'klu:d] *v.* 包括; 包含
coniferous [kəu'nɪfərəs] *a.* 针叶树的
moss [mɒs] *n.* 藓类
liverwort ['lɪvəwɜ:t] *n.* 苔类
shape [ʃeɪp] *n.* 形状
size [saɪz] *n.* 大小
color ['kʌlə] *n.* 颜色
stalk [stɔ:lk] *n.* 茎; 梗; 柄
singly ['sɪŋɡli] *ad.* 单独地
bunch [bʌntʃ] *n.* 一簇; 一束; 一串
petal [petəl] *n.* 花瓣
sepal ['sepəl] *n.* 萼片
male [meɪl] *a.* 雄性的
female ['fi:meɪl] *a.* 雌性的
usually ['ju:ʒuəli] *ad.* 通常地
brightly ['braɪtli] *ad.* 明亮地
attract [ə'trækt] *v.* 吸引

protect [prə'tekt] *v.* 保护
bud [bʌd] *n.* 苞; 芽; 蕾
stamen ['steɪmən] *n.* 雄蕊
filament ['fɪləmənt] *n.* 花丝
anther ['ænthə] *n.* 花药
yellowish ['jeləʊɪʃ] *a.* 淡黄色的
powder ['paʊdə] *n.* 粉末
pollen ['pɒlɪn] *n.* 花粉
contain [kən'teɪn] *v.* 包含
cell [sel] *n.* 细胞
fertilize ['fɜ:tilaɪz] *v.* 使受精
egg [eg] *n.* 卵
stigma ['stɪgmə] *n.* 柱头
style [stɑɪl] *n.* 花柱
ovary ['əʊvəri] *n.* 子房
swelling ['swelɪŋ] *n.* 膨大部位; 隆起部
base [beɪs] *n.* 基部
ovule ['əʊvju:l] *n.* 胚珠
hairy ['heəri] *a.* 有茸毛的
sticky ['stɪki] *a.* 粘性的
bisexual ['baɪ'seksjuəl] *a.* 雌雄同体的
tomato [tə'mɑ:təʊ] *n.* 番茄; 西红柿
capsicum ['kæpsɪkəm] *n.* 辣椒
convolvulus [kən'vɒlvjʊləs] (*pl.* convolvuses 或 convolvuli [kən'vɒlvjʊləɪ]) *n.* 旋花科植物 (如旋花、牵牛花等)
cow pea ['kau,pi:] *n.* 豇豆
lily ['lɪli] *n.* 百合属植物; 百合花
pistil ['pɪstɪl] *n.* 雌蕊
papaya [pə'paɪə] *n.* 番木瓜树; 番木瓜