

# LIFE SCIENCE ENGLISH

生命科学英语



刘 鎔 编

南京大学出版社

Life Science English

# 生 命 科 学 英 语

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南 京 大 学 出 版 社

1992 • 南京

**(苏)新登字第 011 号**

**内 容 简 介**

本书可供生命科学各专业如生物化学、生物学、医学和其他有关专业的学生和工作者的阅读和自修英语用。共有 60 篇文章；其内容由短而长、由浅入深。每篇文章后有词汇、词组和注释。注释中有语法分析，并介绍一些翻译方法，以利于读者自学。书末附有每篇文章的译文。译文可供读者在阅读文章遇困难时参考。

**生 命 科 学 英 语**

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责任编辑 荣翠琴

南京大学出版社出版

(南京大学校内)

江苏省新华书店发行 江苏丹阳新华印刷厂印刷

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开本 787×1092 1/32 印张 11.375 字数 316 千

1992 年 8 月第 1 版 1992 年 8 月第 1 次印刷

印数 1-2000

ISBN7-305-01488-5/H·71

定价 5.00 元

## 本书所用语法术语略语表

<i>a.</i>	adjective (形容词)
<i>ad.</i>	adverb (副词)
<i>conj.</i>	conjunction (连接词)
<i>n.</i>	noun (名词)
<i>num.</i>	numeral (数词)
<i>pl.</i>	plural (复数)
<i>prep.</i>	preposition (介词)
<i>pron.</i>	pronoun (代词)
<i>sing.</i>	singular (单数)
<i>v. aux.</i>	auxiliary verb (助动词)
<i>v. i.</i>	intransitive verb (不及物动词)
<i>v. t.</i>	transitive verb (及物动词)

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## 1. FOOD OF THE ANIMAL

In the life process, the animal works in the opposite way to the plant. The plant has the ability to manufacture its own organic compounds out of inorganic materials in the soil, using the energy from light to bring about the change, while animals must depend on plants for their food, drawing its energy from the materials that have been manufactured by plants.①

The main substances built up by the plant which serve as food both of men and animals are the carbohydrates, the fats and oils, the proteins, and the mineral constituents which we find in the plant's ash.②

Of the carbohydrates the sugars and the starches are among the chief suppliers of energy to the animal.③ The sugars are soluble and can pass directly into the blood tract, but the starches require a preliminary conversion into sugars in the digestive tract. In plants there are many other more complex carbohydrates, built up out of the more simple sugars and starches, some of which can be resolved again into sugars and so act as nutrient in the animal body.④

The fats and oils are equally suppliers of energy, but more concentrated. The proteins supply as much



energy as an equal weight of carbohydrate, but their essential function is to build up the flesh of animals and to repair the constant wear and tear of the cells.⑤

Finally, the food has to supply mineral substance for the body. The bones, for example, contain phosphate of lime. Common salt is needed, for from it the hydrochloric acid of the gastric juice has to be made. The blood and the cells contain such elements as phosphorus, sulphur, potassium, magnesium, calcium and iron, just the elements that are found in the ash of plants.

Animals also need other substances called vitamins, which are essential to the health and growth of men and animals.

## 词 汇

**work** [wɜ:k] *v.t., v.t.* 工作; 起作用, 有效; 解决, 算出(out); *n.* 工作, 著作; 功; (*pl.*) 工厂

**opposite** ['ɒpəzɪt] *a.* 相反的, 对立的; *n.* 相反, 对立物

**way** [wei] *n.* 方法, 方式; 方面; 道路

**ability** [ə'bilɪti] *n.* 能力

**manufacture** [ˌmænju'fæktʃə] *v.t., n.* 制造

**own** [əʊn] *a.* 自己的; *v.t.* 拥有; 承认

**organic** [ɔ'ɡænik] *a.* 有机的

**out of** ['aʊt əv] *prep.* 用...(做

材料); 从...里面; 在...外; 由于, 出于; 缺乏, 丧失

**inorganic** [ˌɪnɔ:'ɡænik] *a.* 无机的

**material** [mə'tɪəriəl] *n.* 物质, 材料, 资料; *a.* 物质的; 重要的

**soil** [soɪl] *n.* 土壤

**while** [waɪl] *conj.* 而; 虽然; 当...的时候; *n.* (一段)时间

**draw** [drɔ:] *v.t.* 拉, 拖; 抽, 拔; 吸取, 提取; 引出, 得出; 画, 绘制  
(*drew* [dru:], *drawn* [drɔ:n])

**main** [meɪn] *a.* 主要的

**build** [bɪld] *v.t.* 建造, 建设; *n.*

构造; 体格  
(**built** [bilt], **built**)  
**serve** [sɜ:v] v.t., v.i. 服务; 起...  
作用; 适用于  
**carbohydrate** [ˌkɑ:bə'haidreit]  
n. 糖类  
**fat** [fæt] n. 脂肪; a. 肥胖的  
**protein** ['prəuti:n] n. 蛋白质  
**mineral** ['minərəl] n. 矿物; 无机  
物; a. 矿物的; 无机的  
**constituent** [kən'stitjuənt] n.  
成分; 组成部分; a. 组成的  
**find** [faɪnd] v.t. 发现; 找到; n.  
发现物  
(**found** [faʊnd], **found**)  
**ash** [æʃ] n. 灰, 灰分  
**starch** [stɑ:tʃ] n. 淀粉  
**among** [ə'mʌŋ] prep. 在...之中  
**supplier** [sə'plaɪə] n. 供给者  
**soluble** ['sɒljəbl] a. 可溶的  
**can** [kæn, kən] v. aux. (**could**  
[kʊd]) 能, 可, 会; n. [kæn] 罐  
头  
**pass** [pɑ:s] v.i., v.t. 通过, 经过,  
过去; 传递  
**blood** [blʌd] n. 血  
**tract** [trækt] n. 管, 道  
**require** [ri'kwaɪə] v.t. 需要, 要求  
**preliminary** [pri'liminəri] a. 初  
步的, 初级的; 预备的  
**conversion** [kən'veɪʃən] n. 转  
换, 转变, 转化  
**digestive** [di'dʒestiv] a. 消化的  
**complex** ['kɒmpleks] a. 复杂的,  
复合的; n. 集合体

**resolve** [ri'zɒlv] v.t., v.i. 分解,  
溶解; 分辨; 解决  
**again** [ə'geɪn] ad. 再; 又  
**act** [ækt] v.i. 行动; 起作用; n.  
行为, 动作  
**nutrient** ['nju:triənt] n. 营养  
物, 养分  
**equally** ['i:kwəli] ad. 同等地,  
相等地  
**concentrate** ['kɒnsentreit] v.t.,  
v.i. 集中; 浓缩; 专心于(on)  
**concentrated** ['kɒnsentreitid]  
a. 集中的, 浓缩的  
**supply** [sə'plaɪ] v.t. 供给, 供应,  
补充; n. 供给, 供应, 补充;  
(pl.) 供应品  
**equal** ['i:kwəl] a. 相等的; v.t.  
等于; n. 相等者  
**weight** [weit] n. 重量  
**function** ['fʌŋkʃən] n. 作用, 功  
能; v.i. 起作用, 工作, 运行  
**flesh** [fleʃ] n. 肉; 肉体  
**repair** [ri'peə] v.t., n. 修理, 修  
补, 恢复  
**constant** ['kɒnstənt] a. 不断的,  
不变的, 恒定的; n. 常数, 常量  
**wear** [weə] v.t., v.i. 穿着, 戴着;  
耐用; 磨损, 损坏; n. 磨损  
(**wore** [wɔ:], **worn** [wɔ:n])  
**tear** [teə] v.t. 撕破; n. 裂缝, 破  
损 (**tore** [tɔ:], **torn** [tɔ:n])  
**finally** ['faɪnəli] ad. 最后, 终于  
**bone** [bəʊn] n. 骨  
**example** [ig'zɑ:mpəl] n. 例, 例证  
**phosphate of lime** [laɪm] 磷酸

钙

**common** ['kɒmən] *a.* 普通的; 共同的

**salt** [sɔ:lt] *n.* 盐

**hydrochloric** ['haɪdrə'klɔ:rɪk]

*a.* 含氢和氯的; 含氯化氢的

**acid** ['æsɪd] *n.* 酸; *a.* 酸性的

**hydrochloric acid** 盐酸; 氢氯酸

**gastric** ['gæstrɪk] *a.* 胃的

**juice** [dʒu:s] *n.* 液, 汁

**gastric juice** 胃液

**phosphorus** ['fɒsfərəs] *n.* 磷

**potassium** [pə'tæsjəm] *n.* 钾

**magnesium** [mæg'ni:zjəm] *n.* 镁

**calcium** ['kælsiəm] *n.* 钙

**iron** [aɪən] *n.* 铁

**just** [dʒʌst] *ad.* 正, 恰好; 仅仅; 刚刚; *a.* 公正的, 正当的

**element** ['elɪmənt] *n.* 元素, 要素, 成分

**also** ['ɔ:lseu] *ad.* 也

**vitamin** ['vaɪtəmin] *n.* 维生素

## 词 组

(to) **bring about** 引起, 促成

(to) **build up** 建立; 构成

(to) **serve as** 起...作用, 作为

**both ... and...** ...和... (两者)都, 既...又...

(to) **act as** 起...作用, 作为

**as...as...** 如同...一样...

**wear and tear** 消耗, 磨损

(to) **have to (do)** 必须..., 不得不...  
**for example** 例如

## 注 释

- ① The plant has the ability to manufacture its own organic compounds out of inorganic materials in the soil, using the energy from light to bring about the change, while animals must depend on plants for their food, drawing its energy from the materials that have been manufactured by plants. 植物能够把土壤中的无机物质制造成为自己所需要的有机化合物, 利用光能来完成这种转化; 而动物必须依靠植物作为食物, 从植物所制造的物质吸取能量. to manufacture... the soil 是不定式短语; 修饰 ability, 用作定语; using...the change 是现在分词短语, 修饰不定式 to manufacture, 用作状语; 从属连接词 while 引导状语从句, 表示对比, 其中 drawing...the materials 是现在分词短语, 修饰动词 depend, 用作状语; 关系代词 that 引导的定语从句修饰 materials, that 在从句中作主语.

- ② ...the mineral constituents which we find in the plant's ash... 存在于植物灰分中的无机成分。关系代词 which 引导定语从句，在从句中作动词 find 的宾语。
- ③ Of the carbohydrates the sugar and the starches are among the chief suppliers of energy to the animal. 糖类当中，糖和淀粉属于动物能量的主要供应者。介词短语 of the carbohydrates 用作定语，修饰 the sugar and the starches，of 短语放在句首时可译成“…当中”；介词短语 among... the animal 用作表语。
- ④ In plants there are many other more complex carbohydrates, built up out of the more simple sugars and starches, some of which can be resolved again into sugars and so act as nutrient in the animal body. 植物体内还有许多较复杂的糖类，它们是由较简单的糖和淀粉构成的。这些较复杂的糖类当中，有一些可以再次分解成糖，因而作为动物体的养分。built up...starches 是过去分词短语，修饰 carbohydrates，用作定语；关系代词 which 指主句中的 carbohydrates，which 在从句中用作介词 of 的宾语，介词短语 of which 修饰 some，用作定语。
- ⑤ The proteins supply as much energy as an equal weight of carbohydrate, but their essential function is to build up the flesh of animals and to repair the constant wear and tear of the cells. 蛋白质所提供的能量与等量的糖类所提供的能量一样多，但是蛋白质的主要功能是构成动物的肌肉和补偿细胞的不断损耗。as...as 的意思是“如…一样”；第一个 as 是副词，修饰 much，表示“一样多”，第二个 as（如）是从属连接词，引导比较状语从句，从句中的谓语动词与主句中的谓语动词相同，因此可以省略，也可以表示出来；as an equal weight of carbohydrate does（用 does 来代替 supplies，以免重复）。

## 2. HOW ANIMALS DIFFER FROM PLANTS

Animals form the second great group of the living world. They are different from plants in many ways. At first sight there appears to be little or nothing in common between them, ① but the two are alike in some respects. They are alike in that they need food, moisture, and air to live; they grow; they produce young, and they die. ② In doing these things animals are similar to plants, yet the methods of doing these things are quite different. So animals must be classed in a separate "world" from plants, i. e., the "animal kingdom".

We know that plants stand still and absorb their food from the ground and from the air around them. ③ The animal method of getting food and moisture differs from that of the plant in that the animal goes in search of food. ④ Because of this animals require some means of movement such as legs, wings, fins, etc.

But food is not always at hand. The animal must have some place to store it and carry it about. This storehouse is the stomach. The food is digested by the stomach and turned into a fluid. The fluid is taken up by the blood and carried by it to every part of the body.

Plants absorb mineral matter from the ground and

from the air, and build it with the help of sunlight into organic plant material; but animals cannot live on minerals alone, and must feed either on plants or on other animals. The food of animals is, therefore, mainly organic, while that of plants is mainly inorganic.

Generally, the breathing of air by plants is done by means of the stomata or small mouths on the leaves. Animals breathe in various ways. The larger animals breathe through the noses into the lungs, fishes breathe with their gills, and insects have many little tubes throughout the length of the body. The object of all these is the same, i. e., to get the oxygen of the air into the blood. And the blood carries food from the stomach and oxygen from the lungs to every part of the body.

## 词 汇

**differ** ['dife] *v.t.* 不同

**second** ['sekənd] *num.* 第二; *n.* 秒, 瞬间

**great** [greit] *a.* 大的; 伟大的

**group** [gru:p] *n.* 群, 组; 类; 族; 基; *v.t., v.i.* 聚集; 分类; 组合

**world** [wə:ld] *n.* 世界, ...界

**living world** 生物界

**different** ['difrənt] *a.* 不同的; 各种的

**first** [fə:st] *num.* 第一; *a.* 最初的, 最早的, 第一流的

**sight** [sait] *n.* 视力, 视觉; 看

**appear** [ə'pie] *v.i.* 出现; 显得,

好像

**little** ['litl] *a.* 小的; 少许, 一点儿; *pron., n.* 少许, 一点点; *ad.* 稍, 略, 毫不

**nothing** ['nəθiŋ] *pron., n.* 没有东西, 什么也没有; 无, 零

**between** [bi'twi:n] *prep.* 在... (两者)之间; 在...的中间; *ad.* 当中, 中间

**alike** [ə'laik] *a., ad.* 相似(的), 同样(的)

**respect** [ris'pekt] *n.* 方面; 尊敬; 关系; *v.t.* 关于; 尊敬

**moisture** ['moistʃə] *n.* 湿气, 水

分

**young** [jʌŋ] *a.* 年轻的, 幼小的;

*n.* (动物的)后代, 幼仔

**die** [daɪ] *v.i.* 死

**similar** ['sɪmɪlə] *a.* 同样的, 相似的, 类似的

**method** ['meθəd] *n.* 方法

**quite** [kwaɪt] *ad.* 十分; 很, 相当

**class** [klɑ:s] *n.* 等级, 种类; *v.t.* 分类, 分级, 归类

**separate** ['sepəreɪt] *a.* 分离的, 分开的, 单独的, 独立的, 个别的;  
*v.t.* ['sepəreɪt] 分离, 分开

**i.e.** = that is 即, 那就是

**kingdom** ['kɪŋdəm] *n.* 王国, 领域, ...界

**stand** [stænd] *v.i.* 站(立); *v.t.* 忍受; *n.* 立场; 架子

(stood [stud], stood)

**absorb** [əb'sɔ:b] *v.t.* 吸收

**around** [ə'raʊnd] *prep.* 在...周围, 围绕; *ad.* 附近; 大约; 到处

**get** [get] *v.t.* 得到; 使...达到, 使得; *v.i.* 变得

(got [gɒt], got)

**search** [sɜ:tʃ] *n., v.t., v.i.* 寻找, 搜查

**means** [mi:nz] *n. pl.* 方法, 手段; 工具, 设备

**movement** ['mu:vmənt] *n.* 运动, 活动; 动作

**leg** [leg] *n.* 腿

**wing** [wɪŋ] *n.* 翼; 翅膀

**fin** [fɪn] *n.* 鳍

**etc.** = et cetera [ɪt'setərə] 等等

**hand** [hænd] *n.* 手; 把柄; 指针;  
*v.t.* 交, 传递

**place** [pleɪs] *n.* 地方, 地点; *v.t.* 放置

**store** [stɔ:] *v.t.* 贮藏, 积蓄; *n.* 积蓄; 店铺

**about** [ə'baʊt] *prep.* 关于; 在...周围; *ad.* 大约; 周围, 到处

**storehouse** ['stɔ:haʊs] *n.* 仓库

**stomach** ['stamək] *n.* 胃

**digest** [di'dʒest] *v.t.* 消化; *n.* ['daɪdʒest] 摘要, 文摘, 汇编

**fluid** ['fluɪd] *n.* 流体, 液体; *a.* 流动的, 流体的

**every** ['evri] *a.* 每个

**part** [pɑ:t] *n.* 部分; 零件; 作用; 角色

**help** [help] *v.t., n.* 帮助

**therefore** ['ðeəfɔ:] *ad.* 因此, 所以

**mainly** ['meɪnli] *ad.* 主要

**generally** ['dʒenərəli] *ad.* 一般, 通常; 广泛地, 普遍地

**breathe** [bri:ð] *v.i.* 呼吸

**stoma** ['steɪmə] *n. sing.* 口, 小孔

(stomata ['steɪmətə] *n. pl.*)

**mouth** [maʊθ] *n.* 口, 孔

**nose** [nəʊz] *n.* 鼻

**lung** [lʌŋ] *n.* 肺

**fish** [fɪʃ] *n.* 鱼

**gill** [gɪl] *n.* 鳃

**insect** ['ɪnsekt] *n.* 昆虫

**tube** [tju:b] *n.* 管

**throughout** [θru:'aʊt] *prep.* 全

..., 整个...; *ad.* 到处, 全部; 始终  
**length** [leŋθ] *n.* 长度  
**object** ['ɒbdʒɪkt] *n.* 目的, 目标;

物体, 对象; *v.t.* [əb'dʒekt] 反对  
**same** [seɪm] *a.* 相同的, 同样的

## 词 组

**(to) differ from** 不同于  
**(to be) different from** 不同于  
**in many ways** 在许多方面  
**at first sight** 初看起来  
**there appears to be** 似乎存在着, 好像有  
**in common** 共同的, 共有的  
**in some respects** 在某些方面  
**in that** 因为, 由于, 在于  
**(to be) similar to** 与...相似的  
**in search of** 寻找  
**because of** 因为, 由于  
**at hand** 在手边, 在附近; 现有的;

迫近  
**(to) take up** 吸收; 占去; 处理; 着手, 开始  
**with the help of** 借助于  
**(to) live on** 靠...生活; 以...为常食  
**(to) feed on** 吃...过日子, 靠吃...生活  
**by means of** 借助于, 用, 以, 通过  
**(to) get...into** 使...进入, 把...送入

## 注 释

- ① At first sight there appears to be little or nothing in common between them... 初看起来, 它们之间似乎很少或者没有共同之处... 本句是倒装句, 与“there+be”的句型类似, “there+be”表示“有(存在)”, “there+appear to be”表示“似乎有(存在)”; there是引导词, appears to be是谓语, little or nothing in common是主语, between them是状语。
- ② They are alike in that they need food, moisture, and air to live; they grow; they produce young, and they die. 它们之所以相似, 是因为它们为了生存都需要食物、水分和空气, 它们都生长、生殖和死亡。in that是从属连接词, 引导状语从句, 表示原因或理由, 也可表示方式。本句中in that所引导的状语从句包含四个并列的主谓结构: 1. they need food, moisture, and air to live; 2. they grow; 3. they produce young; 4. they die.



- ③ We know that plants stand still and absorb their food from the ground and from the air around them. 我们知道植物静止不动，从土壤及周围空气中吸取养料。句中的 that 是从属连接词，引导一个从句，这个从句作为动词 know 的宾语，因此叫宾语从句。从属连接词只引导从句，在从句中不起作用。
- ④ The animal method of getting food and moisture differs from that of the plant in that the animal goes in search of food. 动物摄取食物和水分的方式与植物不同，因为动物是走动寻找食物的。that of the plant 中的 that 是代词，代替前面出现过的名词 method，以免重复；这种 that 后面总是有定语，如介词短语 of the plant 用作定语，修饰 that；that 的复数形式为 those，代替复数名词。