

1 Natural Sciences

1.1 Paleontology 古生物學

paleontology

[ˌpelɪənˈtɒlədʒɪ]

名 古生物學

(n.) the study of the forms of life existing in prehistoric or geologic times, as represented by the fossils of plants, animals, and other organisms

【源】 paleo- “old, ancient” + ology “study of”

The study of fossils is the domain of **paleontology**.

化石研究是古生物學的領域。

paleontologist

[ˌpelɪənˈtɒlədʒɪst]

名 古生物學家

(n.) an expert in paleontology

Paleontologists study the form of life existing in prehistoric or geologic times as represented by fossils of organisms.

古生物學家研究存在於史前或地質時代生物化石的生命形式。

ubiquitous

[juˈbɪkwətəs]

形 到處存在的，
普遍存在的

(a.) existing or being everywhere, esp. at the same time; omnipresent

alter

[ˈɒltə]

動 改變，修改

Limestone may be found in the Cambrian or 300 million years later in the Jurassic strata but a trilobite—the **ubiquitous** marine arthropod that had its birth in the Cambrian—will never be found in Jurassic strata, nor a dinosaur in the Cambrian.

在寒武紀或者三億年後的侏羅紀地層中可能發現石灰岩，但絕不可能在侏羅紀地層中發現三葉蟲化石（三葉蟲是寒武紀非常普遍的水生節肢動物），寒武紀地層也不可能發現恐龍化石。

- (v.) make different in some particular size, style, course, or the like; modify: alter a coat; alter a will

Most people consider the landscape of earth to be unchanging, and its surface is continually **altering**—slowly on the human time scale, but quite rapidly when compared to the great age of Earth.

大部分的人認為地貌是不會改變的，地表則持續地改變——就人類時間來說算緩慢，和地球的久遠年紀相比卻相當快速。

alteration

[ˌɒltəˈreɪʃən]

名 改變，修改

- (n.) the act or process of altering; the state of being altered; a change; modification or adjustment

demise

[diˈmaɪz]

名 死亡

- (n.) death or decease

名 終止

(n.) termination of existence or operation

Paleontologists have argued for a long time that the **demise** of the dinosaurs was caused by climatic alterations associated with slow changes in the positions of continents and seas resulting from plate tectonics.

古生物學家長久以來爭論，恐龍的滅亡是因為大陸和海洋位置改變引起的氣候變遷，而海陸位置改變是板塊運動造成的。

wipe out

[ˈwaɪp_aʊt]

片 消滅；徹底摧毀

【片】 destroy completely; demolish

Most of the older organisms were nearly **wiped out**, although a few hardy species survived.

大部分古老的生物幾乎都滅絕了，儘管一些頑強的種類得以生存。

exterminate

[ɪkˈstɜːməˌneɪt]

動 根除，滅絕；消滅

(v.) get rid of by destroying; destroy totally; extirpate: exterminate an enemy; exterminate insects

extermination

[ɪkˌstɜːməˌneɪʃən]

名 根除，滅絕；消滅

Increasing salinity caused by the evaporation resulted in the **extermination** of scores of invertebrate species.

蒸發造成鹽度越來越高，因而造成許多無脊椎動物種類的滅絕。

extensive

[ɪkˈstensɪv]

形 廣大的

形 廣闊的

形 廣泛的

形 大量的；龐大的

- (a.) of great extent; wide; broad: an extensive area
- (a.) covering or extending over a great area: extensive travel
- (a.) far-reaching; comprehensive; thorough: extensive knowledge
- (a.) great in amount, number, or degree

Hurricane Katrina caused **extensive** damage in New Orleans.

卡翠那颶風在紐奧良造成巨大的損害。

flourish

[ˈflɔːrɪʃ]

動 (生物) 茂盛

- (v.) grow well or luxuriantly; thrive

Off and on throughout the Cretaceous (the last period of the Mesozoic era, during which dinosaurs **flourished**), large shallow seas covered extensive areas of the continents.

斷斷續續在整個白堊紀期間（地質上中生代的最後一紀，恐龍興盛），大型淺海覆蓋大陸大片土地。

動 (事業) 繁榮

- (v.) do or fare well; prosper

【同】 prosper/thrive

Researchers were particularly interested in investigating the conditions under which reflection might **flourish**—a subject on which there is little guidance in the literature.

研究人員特別喜歡研究在哪種情況下反思可能成功——一個幾乎沒有任何文獻指導的課題。

1.1

1.2

1.3

1.4

1.5

diversification

[daɪ,vɜːsəfəˈkeɪʃən]

名 製造各樣產品、
投資多樣化

名 多樣化

(n.) the act or practice of manufacturing a variety of products, investing in a variety of securities, selling a variety of merchandise, etc., so that a failure in or an economic slump affecting one of them will not be disastrous

(n.) the act of diversifying; the state of being diversified

The rapid origin and **diversification** of animals is often referred to as “the Cambrian explosion.”

動物這次快速的起源和多樣時期常常被稱為「寒武紀大爆發」。

settle

[ˈsetl]

動 使（液體）澄清；
使（雜質）沉澱

(v.) cause (a liquid) to become clear by depositing dregs; cause (dregs, sediment, etc.) to sink or be deposited

The explosion lifted about 100 trillion tons of dust into the atmosphere, as can be determined by measuring the thickness of the sediment layer formed when this dust **settled** to the surface.

這次爆炸揚起了約一百兆的灰塵至大氣層，其總量藉由測量當初沉澱至地表所形成的沉積層厚度而決定。

sediment

[ˈsedəmənt]

名 沉積，沉澱

(n.) mineral or organic matter deposited by water, air, or ice

Data from diverse sources, including geochemical evidence preserved in seafloor **sediments**, indicate that the Late Cretaceous climate was milder than today's.

包括保存在海床沉積的地質化學證據的不同資料來源顯示，白堊紀晚期氣候比今天還溫和。

名 沉積物

sedimentary

[ˌsɛdəˈmentəri]

形 沉積的

(n.) the matter that settles to the bottom of a liquid; lees

(a.) made of the solid substances that settle at the bottom of the sea, rivers, lakes, etc.

Sedimentary rocks that originally formed on the seabed may be folded upwards to altitudes of more than 26,000 feet.

原本在海床上形成的沉積岩可能被拱起至超過兩萬六千多英尺。

decompose

[ˌdɪkəmˈpoz]

動 使腐爛

動 分解

(v.) rot; putrefy

(v.) separate or resolve into constituent parts or elements; disintegrate

The bacteria **decomposed** the milk into its solid and liquid elements.

這些細菌把牛奶分解成固態和液態成分。

decomposition

[ˌdɪkəmpəˈzɪʃən]

名 腐爛；分解

(n.) the act or process of decomposing; the state of being decomposed; decay

promote

[prəˈmɒt]

動 晉升；升遷

(v.) advance in rank, dignity, position, etc.

1.1

1.2

1.3

1.4

1.5

動 使（學生）升級

動 促銷

動 促進；發揚

(v.) put ahead to the next higher stage or grade of a course or series of classes

(v.) encourage the sales, acceptance, etc., of (a product), esp. through advertising or other publicity

(v.) help or encourage to exist or flourish; further

Conditions that **promote** fossilization of soft-bodied animals include very rapid covering by sediments that create an environment that discourages decomposition.

促使軟體動物成為化石的條件是沉積物的迅速覆蓋以形成一個抑制分解的環境。

constant

[ˈkɑnstənt]

形 固定的，不變的

形 持續性的

形 不停的

(a.) not changing or varying; uniform; regular; invariable

(a.) regularly recurrent; continual; persistent

(a.) continuing without pause or letup; unceasing

Fish swim constantly. Feeding, courtship, reproduction, and even rest are carried out in **constant** motion.

魚類一直不停地游水。覓食、求偶、繁殖、甚至休息都不斷地在運動。

buffer

[ˈbʌfə]

動 緩衝

(v.) cushion, shield, or protect; lessen the adverse effect of; ease

The shallow seas on the continents probably **buffered** the temperature of the nearby air, keeping it relatively constant.

陸地上的淺海可能緩衝了附近空氣的溫度，使其保持恆定。

retreat

[rɪˈtriːt]

動 撤退，退卻

(v.) fall or draw back; withdraw or retire

At the end of the Cretaceous, the geological record shows that these seaways **retreated** from the continents back into the major ocean basins.

在白堊紀結束時，地質紀錄顯示這些海道從大陸退回主要的海洋盆地。

evolve

[ɪˈvɒlv]

動 逐步發展形成

(v.) develop gradually; come forth gradually into being; develop; undergo evolution

A closely related theory sees theater as **evolving** out of dances that are primarily pantomimic, rhythmical or gymnastic, or from imitations of animal noises and sounds.

一種相關的理論認為，戲劇主要是從無聲的、有節奏、體操的舞蹈，或模仿動物聲音的過程逐漸演變而來。

動 進化形成

(v.) to develop by a process of evolution to a different adaptive state or condition

Some forms of communication among birds **evolved** and modified into deliberate signals.

有些鳥類溝通形式轉變成蓄意的信號。

evolution

[ˌɛvəˈluʃən]

名 發展，進展；
發展之物

(n.) any process of formation or growth; development; a product of such development; something evolved

名 (生物的) 進化，
演化；進化論

evolutionary

[ˌɛvəˈluʃən,ɛri]

形 發展的；進化的；
漸進的

(n.) change in the genetic composition of a population during successive generations, as a result of natural selection acting on the genetic variation among individuals, and resulting in the development of new species

(a.) pertaining to evolution or development; developmental

Fossil records do not document the series of **evolutionary** changes during the evolution of animals.

化石紀錄無法證明動物演化的一系列變化。

rudiment

[ˈrudəmənt]

名 基本原理

名 雛形，萌芽

名 發育不全的器官；
退化器官

(n.) the elements or first principles of a subject

(n.) a mere beginning, first slight appearance, or undeveloped or imperfect form of something: the rudiments of a plan

(n.) an organ or part incompletely developed in size or structure, as one in an embryonic stage, one arrested in growth, or one with no functional activity, as a vestige

rudimentary

[ˌrudəˈmentəri]

形 基本的；初步的

(a.) pertaining to rudiments or first principles; elementary; basic

William Smith received **rudimentary** village schooling but mostly he roamed his uncle's farm collecting the fossils that were so abundant in the rocks of the Cotswold hills.

威廉·史密斯只在村裡的學校接受了最基本的教育，大部分的時間都是在他叔叔的農場裡搜尋化石，這些化石在科茨沃爾德山丘的岩石是很常見的。

形 早期的；發展未完全的

形 退化的

(a.) primitive

(a.) of the nature of a rudiment; undeveloped or vestigial

at the mercy of = at one's mercy

片 受……所支配；
任……處置

【片】 entirely in the power of; subject to

The animals are **at the mercy of** the climate to maintain a livable body temperature.

這些動物受制於天氣影響以維持可以存活下去的體溫。

extinct

[ɪkˈstɪŋkt]

形 絕種的，滅絕的

(a.) no longer existing or living: an extinct species

Perhaps dinosaurs could not tolerate these extreme temperature changes and became **extinct**.

也許恐龍無法忍受這極端的溫度改變，因而滅絕。

形 (火) 熄滅的

(a.) no longer burning or active: an extinct volcano

An expedition team exploring inside the crater of an **extinct** volcano in Papua New Guinea has discovered a lost world of dozens of weird new species.

一支遠征隊伍在巴布亞新幾內亞的死火山火山口裡探險時，發現許多奇怪新物種的失落世界。

extinction

[ɪkˈstɪŋkʃən]

名 滅絕；消滅

(n.) the fact or condition of being extinct

名 熄滅；撲滅

(n.) the act of extinguishing

cope

[kɒp]

動 對付；應付

(v.) struggle or deal, esp. on fairly even terms or with some degree of success

It's difficult to understand why other cold blooded animals would not be affected by the drastic change, whereas dinosaurs were left too crippled to **cope**, especially if, as some scientists believe, dinosaurs were warm-blooded.

很難令人瞭解為什麼其他冷血動物不會被劇變影響，然而恐龍則太孱弱而無法應付這改變，甚至有些科學家認為恐龍是溫血動物。

動 妥善處理

(v.) face and deal with responsibilities, problems, or difficulties, esp. successfully or in a calm or adequate manner

fluctuate

[ˈflʌktʃʊ,et]

動 變動

(v.) change continually; shift back and forth; vary irregularly

The raised floor of the house protects occupants from the **fluctuating** groundwater, from insects, and from snakes.

房屋架高的地板使住戶免於地表水的起伏、昆蟲和蛇的侵襲。

動 波動

(v.) move back and forth in waves; undulate

fluctuation

[ˌflʌktʃʊˈeɪʃən]

名 波動；變動

(n.) a change in a price, amount, level, etc.

【同】 variation