



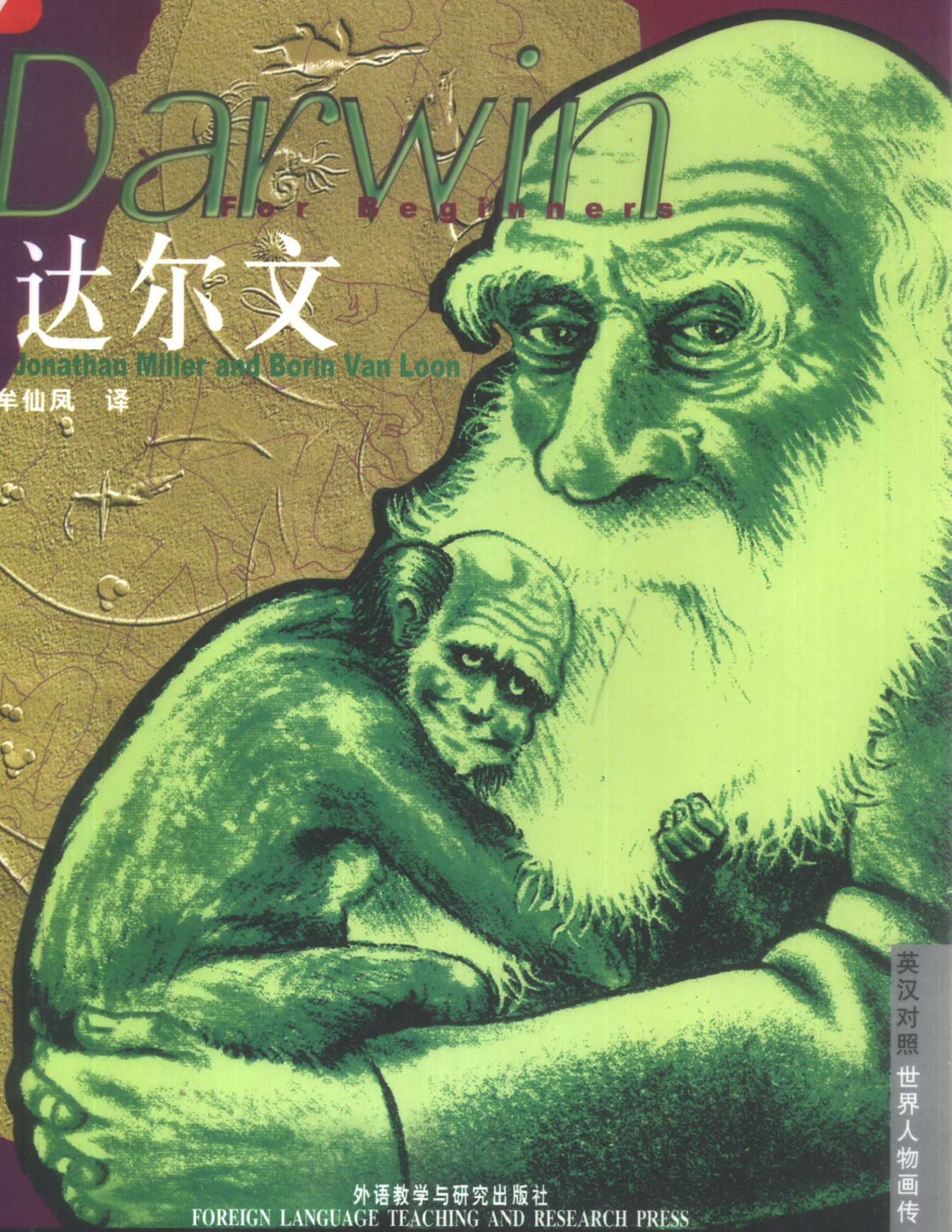
# Darwin

For Beginners

## 达尔文

Jonathan Miller and Borin Van Loon

牟仙凤 译



英汉对照 世界人物画传

外语教学与研究出版社  
FOREIGN LANGUAGE TEACHING AND RESEARCH PRESS

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**达尔文**

(英) Jonathan Miller and Borin Van Loon 著

牟仙凤 译

\* \* \*

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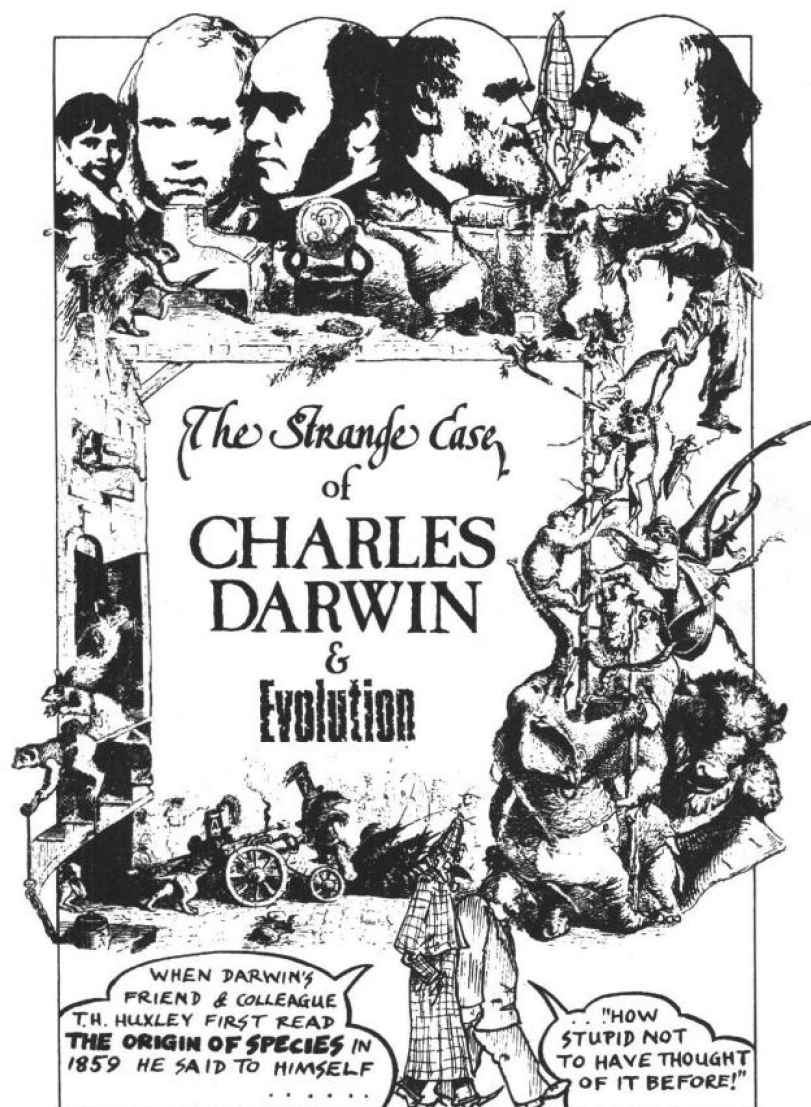
## 出版说明

即将过去的 20 世纪是人类文明空前进步的一个世纪,也是经历了两次世界大战洗礼的一个世纪。这个世纪人类揭开了原子的奥秘,引爆了原子弹和氢弹;这个世纪人类登上了月球,准备着探索火星;这个世纪人类对生命的认识由于 DNA 结构和克隆技术的发现而有了既令人兴奋又令人惶惑的飞跃;这个世纪飞机、卫星、电视、电脑和国际互联网使我们的世界变得如此地小;这个世纪推翻了我们原有的几乎所有关于语言、逻辑、认知、数学、经济甚至时空的观念,使这个世界变得那么丰富多彩。而人类之所以能取得这些空前的令人惊叹的成就,离不开一位位卓尔不群的伟大思想家、科学家和艺术家。在新旧世纪之交,外语教学与研究出版社出版这套英汉对照世界人物画传丛书因而具有了特殊的纪念意义。

这套丛书精挑细选了十位近、现代很有代表性的伟大人物,他们当中有生物进化论的创立者达尔文、相对论之父爱因斯坦、宇宙和时空理论的代表者霍金、存在主义哲学的集大成者萨特、精神分析学科最新权威拉康、国家资本主义经济理论的先驱凯恩斯、立体主义绘画大师毕加索和意识流文学巨匠乔伊斯。真可谓是群星璀璨。出版这套丛书既有益于普及自然科学和社会科学,提高人民素质,又符合外语教学与研究出版社“记载人类文明,沟通世界文化”的立社宗旨。因此可以看作是外研社对千禧年的一份献礼。

该套丛书最大的特点和优点在于深入浅出、图文并茂。当今世界电视、电影作为传媒统治性的繁荣可能宣告了读图时代的来临和注意力经济的盛行。这套丛书图文并茂的形式在某种意义上也是顺应时代发展需要的产物。我们希望,生动有趣、活泼幽默的插图配上浅显易懂的地道英文、忠实的中文对译以及简明扼要的注释会大大提高读者学习英语的兴趣,最终增强中国人在全球化时代掌握这个国际交流工具的信心。

最后需要说明的是,由于原作者的历史观点难免有所偏颇,编者虽已作一定修改,仍需读者审慎辨明。但瑕不掩瑜,从学习外语同时又拓展知识的角度看,本丛书无疑是一套难得的读物。



1859年，达尔文的朋友与同行赫胥黎第一次读到《物种起源》时，自言自语道：

“我真傻！我以前怎么没想到呢？”

Thomas Henry Huxley 赫胥黎(1825—1895)，英国博物学家和教育改革家，支持达尔文学说，第一个提出人类起源问题，并首次提出“不可知论”一词。

“这并不意味着他认为此书微不足道。”

“相反……”

书中的创新意义使他深为折服。为捍卫和普及物种的发展与变异理论，他投入了大量精力。为此，有人称他为……

“嘘！”

达尔文的斗牛犬。

《物种起源》虽是生物科学的杰作，却十分简明易懂。它的英文平铺直叙。任何人，只要逻辑思维正常，都读得懂。



HUXLEY WAS OVERWHELMED BY ITS REVOLUTIONARY IMPORTANCE & DEVOTED SO MUCH OF HIS LIFE TO DEFENDING & POPULARIZING THE THEORY OF DESCENT WITH MODIFICATION THAT HE EARNED THE NAME OF...

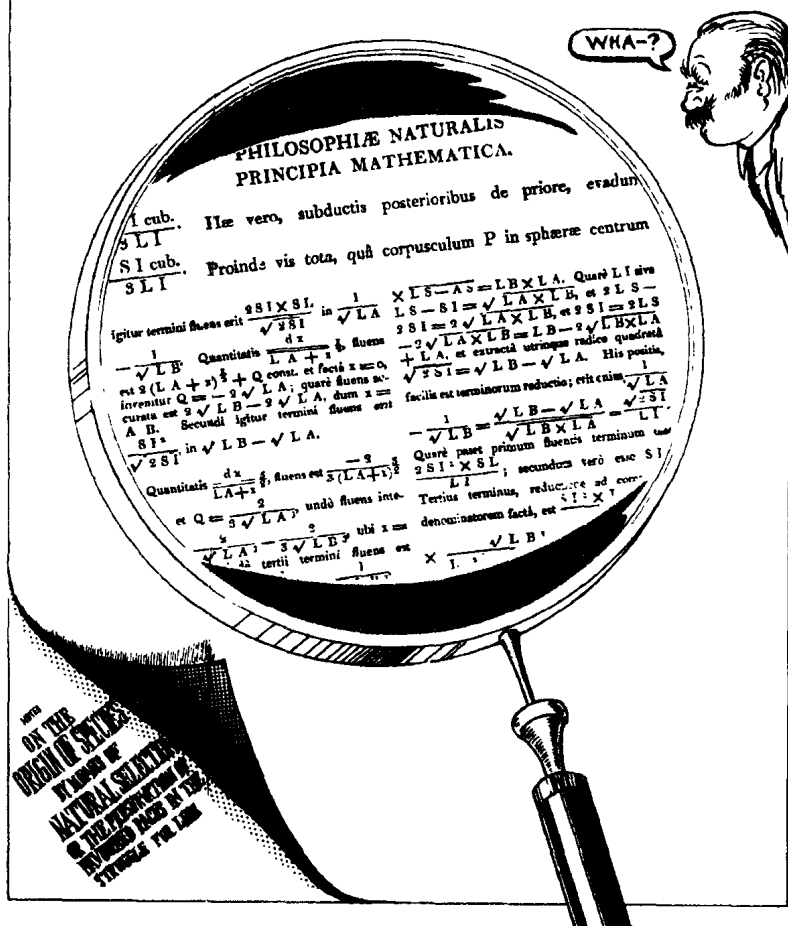


DARWIN'S BULLDOG.

AND YET FOR A MAJOR WORK OF SCIENTIFIC BIOLOGY THE ORIGIN OF SPECIES IS AMAZINGLY SIMPLE. IT'S WRITTEN IN SUCH STRAIGHTFORWARD ENGLISH THAT ANYONE WHO IS CAPABLE OF FOLLOWING A LOGICAL ARGUMENT CAN RECOGNIZE WHAT IT MEANS.

revolutionary a. 突破性的，完全创新的

In fact **The Origin of Species** was a popular success. The first printing sold out on the day of publication. This alone distinguished it from most other great theories in the history of science. Isaac Newton's great work was, and still is, inaccessible to the general reader. The mathematical argument is so abstruse that it took many years of patient analysis before the **scientific** community fully understood its implications. The fact that Darwin's theory could be put so simply may have been one of the reasons Huxley asked himself why nobody had thought of it before.



事实上,《物种起源》当时很受欢迎。第一次印刷,发行当天就被抢购一空。足见它的确与众不同,科学史上的其它著名理论难以望其项背。牛顿的伟大定律,过去普通读者并不理解,现在也是如此。只因定律的数学论证太深奥,科学界也是经过多年耐心的分析,才弄清它的全部含义,而达尔文的理论却写得浅显明白。或许正是因为这一点,赫胥黎才奇怪怎么以前没有人想到它。

Sir Isaac Newton 牛顿(1642—1727),英国物理学家、数学家和天文学家,提出万有引力定律、力学三大定律和白光由色光组成的理论,并开创微积分学,著有《自然科学的数学原理》、《光学》等。  
sell out (货)被售完    inaccessible  $\alpha$ . 难懂的,无法理解的    abstruse  $\alpha$ . 深奥的,难解的

达尔文的个性更加深了人们的印象。他所做的一切,似乎都是业余爱好,他的正规教育是一连串不光彩的失败。

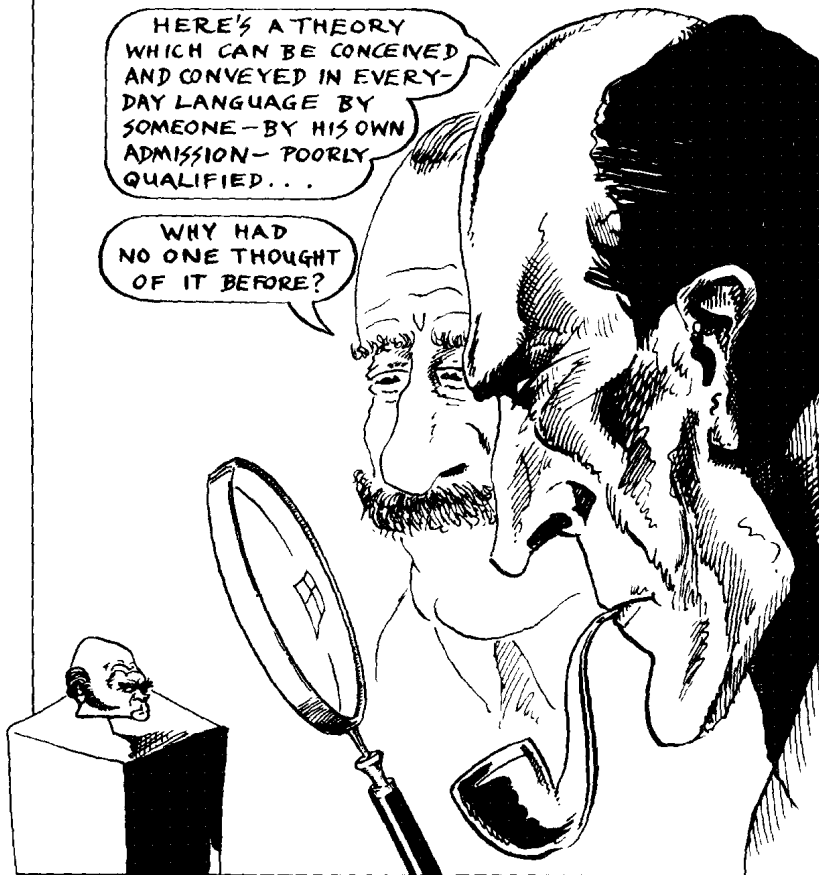
所有这一切并没有削弱达尔文的成就,却确实确实显示出他的成功与众不同。

“这个理论,由一个自认为天资并不聪颖的人用通俗易懂的语言把它表达了出来……”

“为什么以前没人想到过呢?”

THIS IMPRESSION WAS REINFORCED BY DARWIN'S OWN PERSONALITY. HE SEEMED LITTLE MORE THAN AN AFFABLE AMATEUR, SOMEONE WHOSE FORMAL EDUCATION HAD BEEN A SERIES OF HUMILIATING DISASTERS.

NONE OF THIS DISCREDITS DARWIN'S ACHIEVEMENT. BUT IT DOES REVEAL SOMETHING RATHER PECULIAR ABOUT IT.



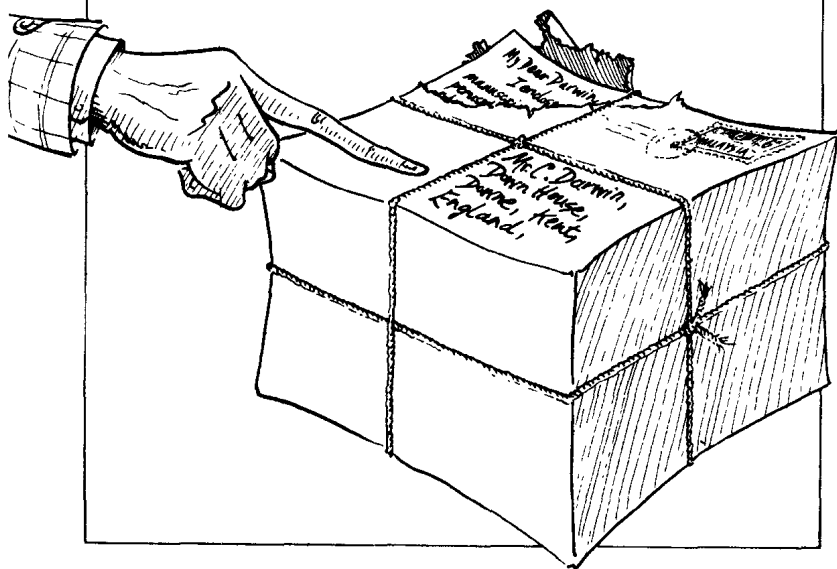
little more than 只是……而已 formal a. (指教育)正规的 humiliating a. 丢脸的,不光彩的  
discredit v. 败坏……的名声,诽谤



In fact, one reason why Darwin issued his book when he did, is that he was panicked into publishing by receiving through the post a summary of the theory which he'd been secretly nursing for twenty years.

By 1859, the scientific atmosphere was saturated with the possibility of evolution. It was only a matter of time before someone stumbled on the truth. Nevertheless the question remains: why hadn't it been recognized before?

One answer might be that the necessary facts weren't available until Darwin discovered them, and that he was lucky to find the missing pieces which allowed him to make sense of all the rest. But this isn't true either, for although Darwin made many important observations of his own, the facts which would have supported his theory were already known and had been widely discussed before. No one it seems had recognized their significance. Or not entirely.



实际上,达尔文发表《物种起源》的原因是:有一天,他收到一封信,内容是他悄悄酝酿了二十多年的进化论的简要。他这才惊慌不已,决定出版该书。

至1859年,进化论在科学界已是呼之欲出,只是迟早被发现的问题。然而,问题正是:为什么以前没人发现它呢?

一个解释可能是:在达尔文之前,缺乏必要的事实证据,而达尔文却幸运地发现了这些散佚的事实,使他能够融会贯通。但是,这种说法并不十分确切。因为尽管达尔文自己有很多重大发现,但大部分论证进化论的事实在此之前就早已广为人知,广为议论。但似乎无人意识到它们的重要性,或者说没有完全意识到它们的重要性。

panic *v.* 极度惊慌,惊慌失措    saturate *v.* 浸透,渗透    matter *n.* (讨论或考虑的)问题  
stumble *v.* 偶然遇到;碰巧找到(后接介词 on, upon, onto 或 across)    make sense of 理解;弄懂……的意思

“为什么?为什么他们没有‘看到’达尔文所看见的呢?一个科学家认识一个重要的没有任何新特征的新结构图时,就像玩“拼图游戏”一样。拼图的游戏画面突然发生变化。”

“这些线拼起来的图案就像是一位青春靓女的美丽侧影。

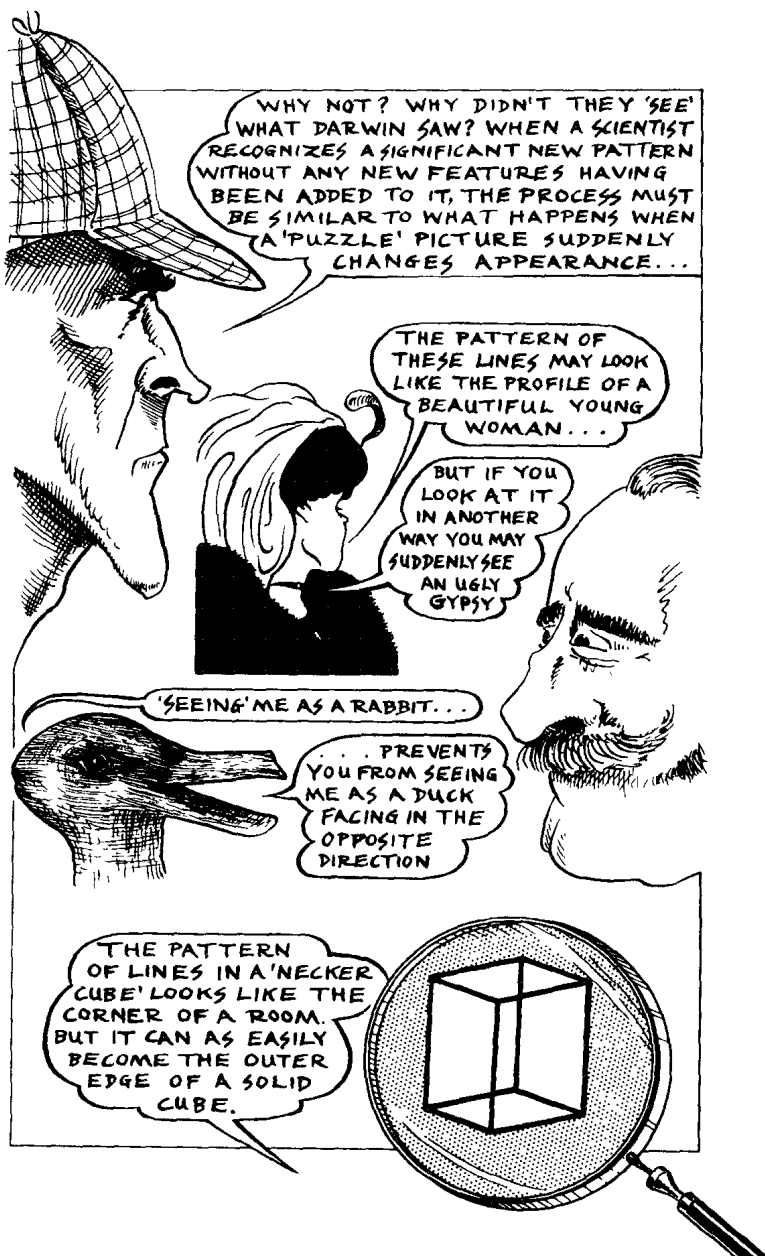
但换个角度,你或许会猛然发现它们竟是个丑陋的吉卜赛人。”

“把我‘看’成一只兔子

.....

会妨碍你从对面看我会像只鸭子。”

“同样,‘内克尔氏立方体’的线条形成的图形看起来像房间的一隅,但也很容易被看成是固体立方体的棱。”



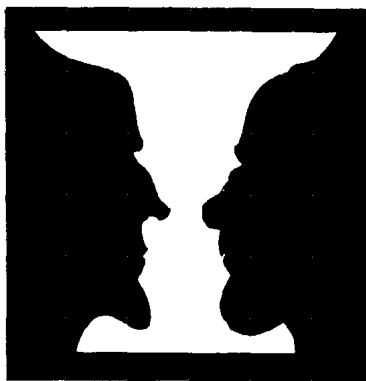
recognize *v.* 认出    profile *n.* (面部或头部)的侧面(像),侧影    Necker cube 内克尔氏立方体,与观察者解释的两可性有关的一种视觉错觉,以瑞士物理学家、数学家路易·内克尔(1730—1804)的姓氏命名。

The point is that a strong preconception about what a pattern means, what it represents, can stop you seeing it in any other way. Presumably this happened to Darwin's predecessors and some of his contemporaries as well. They failed to 'see' what Darwin 'saw', not because they were short of facts, but because they had reasons for 'seeing' the facts in a different way. They saw a duck and Darwin taught them to recognize a rabbit. Huxley's surprise was recognizing something that had been in front of his eyes all along.

The question is, what preconceptions led scientists to overlook the pattern that Darwin eventually saw? (Another question you will have to ask is whether Darwin really saw what he claimed to have seen, and whether his own position was quite as revolutionary as it has been said to be.)

There were several preconceptions which delayed the recognition of evolution in nature. And they arose from man's tendency to project the image of his own mind onto the world around him.

1. The biblical notion of special creation.
2. The Greek philosophical notion of Ideal Forms.



关键是，人们对结构图所表达的含义，所代表的事物，一旦有了先入之见，便不能再从另一个角度看待结构图本身了。达尔文的前辈，甚至一些同辈，大概都犯了上述错误。他们没“看见”达尔文所看见的，并不是因为缺少事实证据，而是因为他们“看待”事实的角度不同。他们看见的是鸭子，达尔文却教他们把它当成兔子。正是这种认识眼前普通事物的本领，使赫胥黎惊诧不已。

问题是，究竟什么先入之见使许多科学家与达尔文最终发现的进化论模式擦肩而过？（你可能还要问，达尔文是否真正发现了他所声称发现的东西呢？他的贡献，是否像人们所说的好样具有革命性的意义呢？）

有几种先入之见延缓了人类对自然界进化的认识。这些先入之见来自于人类总想把心中的想法强加于自然界的倾向。

1. 圣经的上帝创世说
2. 希腊哲学的理念范型

说

preconception *n.* 事先构成的看法(或想法);先入之见,我见    presumably *ad.* 据推测;大概;可能  
project *v.* [心理学]把(自己的感情等)投射给(别人)    ideal *a.* 观念的;理念的    Ideal Forms [哲学]范型(古希腊哲学家柏拉图认为永恒不变的理念是个别事物的“范型”)

## 神造说

“大多数社会把生物界的起源解释为神的旨意。在西欧，这一教义被写进《圣经》，奉若神明。”

根据《创世记》，上帝创造了整个世界，也创造了世界上各种各样形态各异的生物。基督教的神学家从这个神话中得出了若干重要教义。



Creationism *n.* 神造说; 特创说 (反对进化论的学说, 认为万物皆由上帝一次造成, 不经过演化和发展。) enshrine *v.* 祀奉; 把……奉为神圣 Genesis *n.* 基督教《圣经》中的《创世记》 distinguishable *a.* 区别得出的, 可以辨明的

## The Relative Youth of the Earth

CHRISTIAN WRITERS ARGUED WITH ONE ANOTHER ABOUT THE EXACT DATE OF THE CREATION, BUT THEY ALL AGREED IT WAS A COMPARATIVELY RECENT EVENT...

TIME WE MAY COMPREHEND, 'TIS BUT 5 DAYS ELDER THAN OURSELVES & HATH THE SAME HOROSCOPE WITH THE WORLD.

THE UNIVERSE IS 6000 YEARS OLD—THAT'S MY RULING!



For Christians, physical history was a short action-packed chapter bracketed between endless tracts of eternity. Such a short time-span ruled out the possibility of gradual change. Until scientists recognized that the age of the earth had to be reckoned in billions of years, evolutionary thought had no chance of gaining a foothold. This consideration will return to plague Darwin in his later years.

### 地球相对年轻说

“基督教的作家们各执己见，争论上帝创世的具体日期。但他们都同意，创世相对来说并不是很久以前的事情。”

17世纪的布朗爵士：“我们可以这样理解时间：上帝创世的时间仅比我们人类诞生的日期早5天，星象也和人类的相同。”

17世纪的厄舍尔大主教：“宇宙的历史只有6,000年——那是我的裁定！”

对基督徒来说，自然界的历史只是夹在无尽的永恒中间短短的一章而已，其中有各种各样的活动发生。这么短的时间跨度自然排除了渐渐演化的可能。科学家只有意识到地球的年龄已有数十亿年，进化论的思想才站得住脚。在达尔文的晚年，这一问题又困扰着他。

Tames Ussher (1581—1656), 爱尔兰圣公会高级教士、学者，曾任都柏林三一学院教授和阿尔马大主教(1625)，主张成立爱尔兰民族教会。

Sir Thomas Brown 布朗(1605—1682)，英国医师、作家，把科学和宗教溶为一体，名著有《一个医生的宗教信仰》等。rule out 排除……的可能性 ruling n. 裁决，裁定，规定 archbishop n. 大主教，主教长 For Christians, physical history was a short action-packed chapter bracketed between endless tracts of eternity. 基督徒认为，上帝创世之前，宇宙是永远的混沌状态。创世后，人类存在一定的时间，世界末日来临之时，通过审判的人升到天堂，没通过的则永远下地狱，之后，宇宙又处于永恒的状态。foothold n. 稳固的(地位或)基础



### 恒久不变的地球物理结构

正统基督教认为，地球的外貌是下列两种因素共同作用的结果。

1. 上帝赋予地球的原貌。

2. 上帝用洪水惩罚人类而对地球造成的破坏。那次大洪水在地球上冲出了高山和峡谷。其后，地球是一片静止不动的废墟，基本结构没发生任何变化。在这种单调静止的状态下，生物没有必要发生变化。

## *The Permanence of the Earth's Physical Structure*

According to orthodox Christian thought, the appearance of the modern earth was the result of two factors:

1. The shape God had given it in the beginning.
2. The damage he inflicted on it when he punished man with the flood. The globe was a static ruin, and hadn't changed its basic structure since the deluge ploughed up the mountains and excavated the valleys. In a scene of such changeless monotony there was no need for living things to alter.



orthodox *a.* 正统的, 正宗的

plough up 使有沟脊; 犁(地)

excavate *v.* 挖空, 开凿; 挖掘

# The Permanence of Living Things

Once Adam had named all the plants and animals these inaugural forms bred true to type and never changed their identity.



WHEN GOD INUNDATED THE WORLD HE ORDERED NOAH TO SET ASIDE A REPRESENTATIVE PAIR OF EVERY LIVING TYPE, SO THAT AFTER THE FLOOD THE WORLD WOULD BE REPOPULATED EXACTLY AS BEFORE.

For pious Christians it was an article of faith that the living world was an unaltered replica of the one which God had created at the outset. No species had been lost and none had been altered. Extinction was just as inconceivable as change.

For a long time this dogma led scientists to disregard the significance of fossils. The fact that these 'figured stones' happened to resemble shellfish etc. was often dismissed as an interesting coincidence, or as a sign that God had playfully decorated his rocks with ornamental replicas of living things.

## 恒久不变的生物

一旦亚当命名了所有的植物和动物，这些最初的生命形式就开始繁衍生息，永不改变其种类和性质。

“上帝淹没地球时，曾命令诺亚从每种生物中选取一对代表，以便洪水过后，世界上仍有生物，与先前一模一样。”

现存生物界与上帝创世时一模一样，是虔诚的基督徒深信不疑的信条。既没有物种消失，也没有物种改变。而物种的灭亡，与演变一样不可理喻。

长期以来这一教条使科学家忽视了化石的重要性。这些“带图案的石头”碰巧与贝类等很相似，这一事实常常被认为是有趣的巧合或者是上帝用生物的样子装饰他创造的石头而轻轻带过。

inaugural *a.* 首次的    breed true to type 繁殖纯种    true *a.* 纯种的，与原种相同的  
inundate *v.* 淹没；泛滥    an article of faith 信条    replica *n.* (尤指按比例缩小的)复制品；摹本  
inconceivable *a.* 不能想像的；不可思议的    dismiss 简单(或迅速)地处理；不认真考虑  
Adam *n.* 亚当(基督教《圣经》故事人物，所谓“人类的始祖”)    Noah *n.* 诺亚(或译“挪亚”或“诺厄”，基督教《圣经》故事人物，洪水灭世后人类的新始祖。)

一旦化石的有机特性得到确定，棘手的问题又来了。17世纪的博物学家约翰·雷宣称：

“由此可以得出，许多贝类已消失了，虽然哲学家们一直不愿意承认这个事实，担心任何物种的灭亡都会给宇宙造成损失，使宇宙不再完美。他们认为，上帝一直特别关注和保护创世的成果。”

承认不完美的物种偶然会消亡令人为难。相比之下，较易接受的是：设想上帝故意毁灭了他创造的一切，只是为了教训一下人类，然后重新创造一切。



John Ray 约翰·雷 (1627—1705)，英国博物学家、植物学家和分类学的先驱，著作颇丰，主要有《英国植物名录》、《植物史》、《昆虫史》等。

pose *v.* 提出(问题、声明等) follow *v.* 是……的必然结果；因……而起 handiwork *n.* (集体名词，不可数) 亲手做的东西(或事情)；自己造成的后果

This idea had to be elaborated as geological discoveries revealed not one but **many** layers of extinct life. By the end of the 18th century, it was generally acknowledged that the rocks contained a whole record of a previous existence.

In order to avoid the blasphemous implication of continuous change, scientists introduced the theory of intermittent catastrophes. Instead of one flood it was now suggested that there had been many — Noah's being the last. After each cataclysm God had generously replenished the globe with a fresh stock of living things. It soon became apparent, however, that these successive creations were not simply repetitions of one another. Each fossil level showed a distinct advance on its predecessor. Invertebrates appeared in the lowest and oldest strata. Then fish began to figure. Reptiles and birds appeared later, then mammals and finally man.



由于地理发现表明并不是一段地质层，而是**多段**地质层含有已消亡的生命，这一观点就需要详细的阐述。18 世纪末，人们普遍承认岩石记录了曾经存在的生命。

为了避开这种亵渎神灵的持续变化论，科学家引入了间歇灾变说。他们提出地球已多次被洪水淹没——诺亚经历的只是最后的那次。每次洪灾过后，上帝都慷慨地为地球创造出大批新生物。然而不久，人们又发现，这种创造并不是简单的重复。每一个化石层的生命都比前一层有明显的进步。无脊椎动物化石出现在其最深、最古老的地层，其后依次是鱼类化石、爬行动物和鸟类化石、哺乳动物化石，最后是人类化石。

“这些发现带来了进步的概念！”

elaborate *v.* 详尽阐述；发挥    blasphemous *a.* 亵渎上帝的    intermittent *a.* 间歇的；断断续续的；周期性的    catastrophe *n.* (地质学的)灾变，灾难，灾祸    cataclysm *n.* 洪水，大灾难    replenish *v.* 使充斥(栖息的动物)