

HEP World's Classics

Natural History (I)

自然史

第 1 卷

GEORGES-LOUIS LECLERC, COMTE DE BUFFON

TRANSLATED BY

JAMES SMITH BARR



HIGHER EDUCATION PRESS

This edition first published in 1797 by The Proprietor

This book reproduces the text of the original edition. The content and language reflect the beliefs, practices and terminology of their time, and have not been updated.

内容简介

布封是18世纪法国著名的博物学家和作家。他坚持以唯物主义的思想看待地球与生物的起源和发展，被誉为“和大自然一样伟大的天才”。《自然史》是一部博物志，书中以大量的科学观察为基础，从唯物主义的角度对自然界的各种现象做了详细的描述。书中提到的“物种可变”和“进化”的思想对当时的社会具有积极的启蒙作用，也对后来达尔文提出“物种起源”与“进化论”产生了深远影响。

《自然史》原著为法文，共44卷。本版为英国学者James Smith Barr在1797—1807年翻译出版的10卷册，是原著中最精华的部分，主要包括地球的理论、动物史、人类史、家畜驯养史，并简单介绍了矿物和植物等内容。本书可供生物学、生态学、地质学等专业的高校师生和相关科研人员以及博物爱好者阅读。

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Open and Read
Find Something Valuable

HEP World's Classics

There is a Chinese saying: "It is beneficial to open any book." It is even more fruitful to open and read classic books. The world is keeping on changing, but really fundamental and essential things stay the same since there is nothing new under the sun. Great ideas have been discovered and re-discovered, and they should be learnt and re-learnt. Classic books are our inheritance from all the previous generations and contain the best of knowledge and wisdom of all the people before us. They are timeless and universal. We cannot travel back in time, but we can converse with the originators of current theories through reading their books. Classic books have withstood the test of time. They are reliable and contain a wealth of original ideas. More importantly, they are also books which have not finished what they wanted or hoped to say. Consequently, they contain unearthed treasures and hidden seeds of new theories, which are waiting to be discovered. As it is often said: history is today. Proper understanding of the past work of giants is necessary to carry out properly the current and future researches and to make them to be a part of the history of science and mathematics. Reading classic books is not easy, but it is rewarding. Some modern interpretations and beautiful reformulations of the classics often miss the subtle and crucial points. Reading classics is also more than only accumulating knowledge, and the reader can learn from masters on how they asked questions, how they struggled to come up with new notions and theories to overcome problems, and answers to questions. Above all, probably the best reason to open classic books is the curiosity: what did people know, how did they express and communicate them, why did they do what they did? It can simply be fun!

This series of classic books by Higher Education Press contains a selection of best classic books in natural history, mathematics, physics, chemistry, information technology, geography, etc. from the past two thousand years. They contain masterpieces by the great people such Archimedes, Newton, Lavoisier, Dalton, Gauss, Darwin, Maxwell, and hence give a panorama of science and mathematics. They have been typeset in modern fonts for easier and more enjoyable reading. To help the reader understand difficult classics better, some volumes contain introductions and commentaries by experts. Though each classic book can stand in its own, reading them together will help the reader gain a bigger perspective of science and mathematics and understand better interconnection between seemingly unrelated topics and subjects.

Higher Education Press has been the largest publisher in China. Besides the long tradition of providing high quality books for proper education and training of university and graduate students, she has also set out to provide research monographs and references books to people at all levels around the world. Higher Education Press considers it her duty to keep the world science and mathematics community informed of what has been achieved in their subjects in easy and accessible formats. This series of classic books is an integral part of this effort.



万物皆有道 自然最奇妙

—— 写于《自然史》发行时 (代序)

在已探知的星球中,唯地球有人类。人类社会和自然界构成了这颗星球的整个世界。人类来源于自然,依赖于自然,不断地探索自然,了解自己从何而来,向何而去?为什么在这万物共生的自然界脱颖而出,成为这个世界的主宰?又怎样与这个世界大家庭和睦相处,适应客观发展?……只有了解过去,才能更好地认识现在;懂得了过去和现在,才能主动地面对未来。历史是最好的教科书,在《地球简史》《人类简史》《时间简史》等纷纷面世的当代,人们不由地把目光又投向 260 多年前就诞生了的《自然史》,这部洋洋数百万字的旷世巨著,开辟了科学史作的先河,它从行星到地球,从空气到海洋,从动物到人类,……天、地、生、人,无所不包,海、陆、空,面面俱到,是一部记述自然的百科全书。

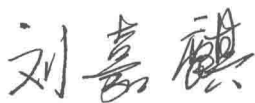
书中全面论述了地球理论和地球历史,展现了风、火、水、潮、雷、震(地震)、光、热等各种自然现象;对人和生物的论述更是生动形象,丰富多彩。从生命的起源、器官的发育、青春期的特点,到机能的退化,直至死亡,把人类生息繁衍的过程讲得有声有色。对生物,特别是动物的描绘投下了重重笔墨,占据了大量篇幅,天上飞的,地上长的,野生的,驯养的,食肉的,食草的,大到熊、马,小至鼠、兔,畜、禽、鸟、兽,花、草、树、木,样样俱全,活灵活现,既有理性,又有情趣,好像无论哪种野性的动物都可以成为人类的宠物和朋友。法国著名思想家卢梭是这样评价的:“布封以异常平静而又悠然自得的语言歌颂了自然界中所有的重要物品,呈现出造物者的尊严与灵性。他具有那个世纪最美的文笔。”

万物皆有道,自然最奇妙。几乎所有涉及自然的事物都可以从《自然史》汲取营养,得到启示。读这类名著,既能增长知识,丰富阅历,又能赏心悦目,

闲情逸致。即使历史已过去了几百年, 社会发生了巨变, 也未失去这部历史巨著的价值和魅力。这就是一部不朽之作的历史地位。布封在书中提出“物种可变”和“进化”的思想, 被生物进化论创始人达尔文称为“以现代科学眼光对待这个问题的第一人”。

哲语说, 文如其人。《自然史》的作者布封, 全名乔治·路易·勒克莱尔·布封 (Georges-Louis Leclerc, Comte de Buffon, 1707—1788), 如同他的不朽著作一样, 也有一部不寻常的经历。他生于法国, 自幼喜好自然科学, 特别是数学。1728 年法律专业毕业后, 又学了两年医学。20 岁时就先于牛顿发现了二项式定理; 26 岁成为法兰西科学院机械部的助理研究员, 翻译并出版了英国博物学者海尔斯的著作《植物生理与空气分析》和牛顿的《微积分术》; 1739 年, 32 岁的他转为法兰西科学院数学部的副研究员, 并被任命为“巴黎皇家植物园及御书房”的总管; 1753 年成为法兰西科学院院士。他用 40 年的时间写出了长达 36 卷的《自然史》, 后又由他的学生整理出版了 8 卷, 共 44 卷。此书一出版, 就轰动了欧洲的学术界, 各国很快有了译本。1777 年, 法国政府给布封建了一座铜像, 上面写着: “献给和大自然一样伟大的天才。”这是对布封的崇高评价。

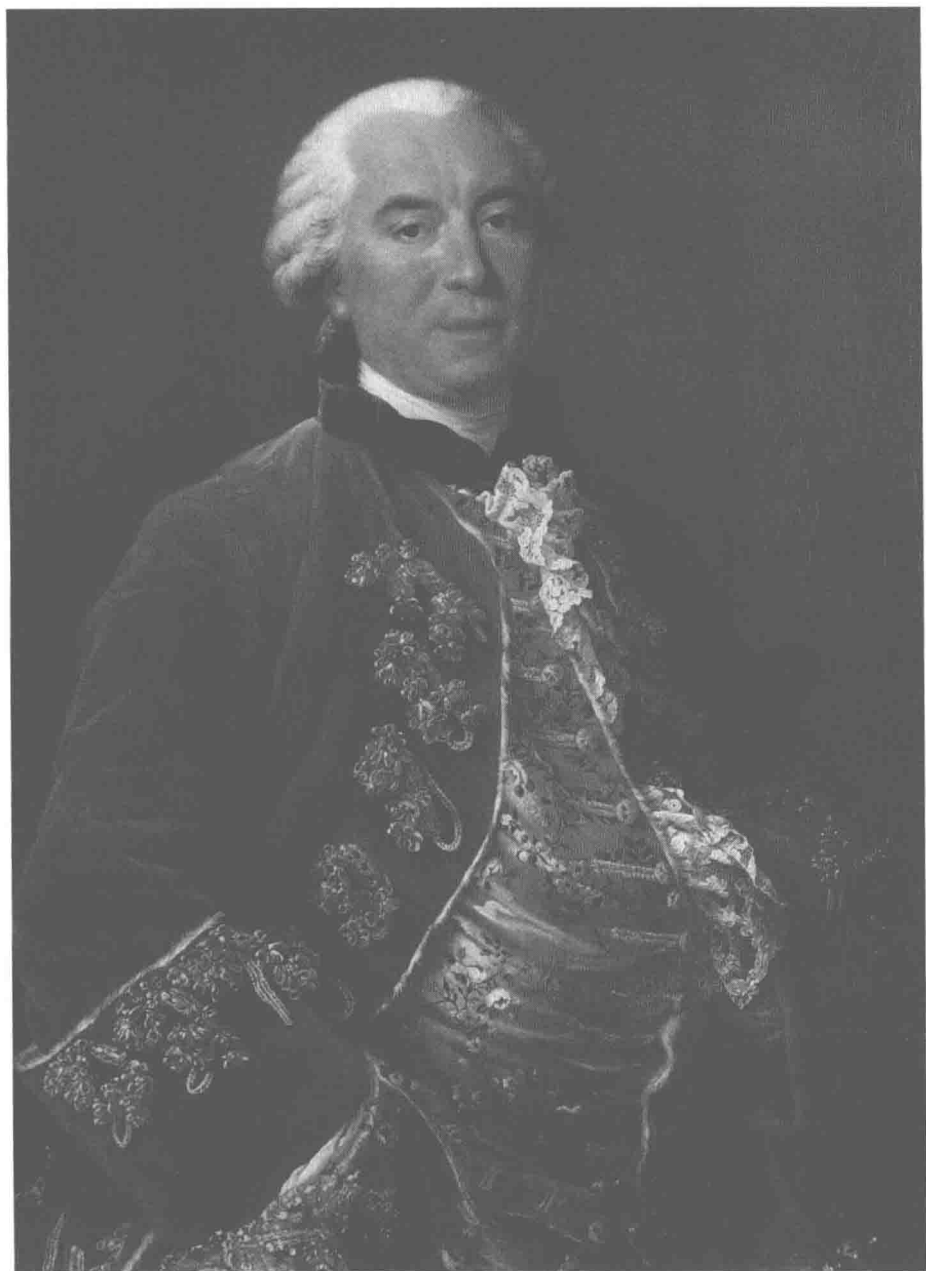
《自然史》原著为法文, 这里出版的是英国学者 James Smith Barr 在 1797—1807 年翻译的英文版 10 卷册, 选取的是原著中最精华的部分。发行这样的英文版高级作品、高级读物, 就像外文书籍、外文刊物一样, 自然面对的也是高水平的读者和馆藏者, 希望他们既可以接近原汁原味地欣赏原著, 感受自然的魅力, 受到自然科学和文学艺术的熏陶, 同时又能自然而然地提高英文素养和写作水平。在广大知识分子外语水平普遍提高的今天, 这样的科学传播形式也许会受到越来越多读者的青睐。



中国科学院院士

中国科学院地质与地球物理研究所研究员

2017 年 6 月 25 日



Georges-Louis Leclerc, Comte de Buffon (1707—1788)

布封 (Georges-Louis Leclerc, Comte de Buffon, 1707—1788), 18 世纪法国著名的博物学家和作家。他坚持以唯物主义的思想看待地球与生物的起源和发展, 被誉为“和大自然一样伟大的天才”。

布封出生于法国蒙巴尔城的一个律师家庭, 自幼接受教会教育, 对自然科学始终有着浓厚的兴趣。1730 年, 大学毕业的布封结识了年轻的金斯顿公爵, 两人一起游历了法国南部、瑞士和意大利, 并在这位公爵的家庭教师的影响下开始研究博物学。1733 年, 布封进入法兰西科学院担任助理研究员, 1739 年, 成为巴黎皇家植物园园长, 1753 年, 当选为法兰西科学院院士。布封毕生从事博物学研究, 花费 40 年心血著成《自然史》这部煌煌巨著。《自然史》共 44 卷, 是一部博物志, 包括了地球史、人类史、动物史和矿物史等, 堪称百科全书式的巨著。书中提到的“物种可变”和“进化”的思想对当时的社会具有积极的启蒙作用, 也对后来达尔文提出“物种起源”与“进化论”产生了深远影响, 布封也因此被达尔文称为“以现代科学眼光对待这个问题的第一人”。

Barr's Buffon.

Buffon's Natural History.

CONTAINING
A THEORY OF THE EARTH,
A GENERAL
HISTORY OF MAN,
OF THE BRUTE CREATION, AND OF
VEGETABLES, MINERALS,
&c. &c.

FROM THE FRENCH.

WITH NOTES BY THE TRANSLATOR.

IN TEN VOLUMES.

VOL. I.

London :

PRINTED FOR THE PROPRIETOR,
AND SOLD BY H. D. SYMONDS, PATERNOSTER-ROW.

1797.

PREFACE.

WE should certainly be guilty of a gross absurdity if, in an age like the present, we were to enter into an elaborate discussion on the advantages to be derived from the study of NATURAL HISTORY; the ancients recommended it as useful, instructive, and entertaining; and the moderns have so far pursued and cultivated this first of sciences, that it is now admitted to be the source of universal instruction and knowledge; where every active mind may find subjects to amuse and delight, and the artist a never failing field to enrich his glowing imagination.

It would have been singular if, on such a subject, a number of authors had not submitted the produce of their observations and labour; many have written upon Natural Philosophy, but the Comte de BUFFON stands eminently distinguished among them; he has entered into a minute investigation, and drawn numberless facts from unwearied observations far beyond any other, and this he has accomplished in a style fully accordant with the importance of his subject. Ray, Linnæus, Rheaurmur, and other of his cotemporaries, deserve much credit for their classing of animals, vegetables, &c. but it was BUFFON alone who entered into a description of their nature, habits, uses, and properties. In his Theory of the Earth he has displayed a wonderful ingenuity, and shewn the general order of Nature with a masterly hand, although he may be subject to some objections for preferring physical reasonings on general causes, rather than allowing aught to have arisen from supernatural agency, or the will of the Almighty. In this he has followed the example of all great philosophers, who seem unwilling to admit that the formation of any part of the Universe is beyond their comprehension.

As the works of this Author will best speak for themselves, we shall avoid unnecessary panegyric, hoping they will have received no material injury in the following translation; we shall therefore content ourselves with observing, that in our plan we have followed that adopted by the Comte himself in a latter edition, from which he exploded his long and minute treatises on anatomy and mensuration; though elegant and highly finished in themselves, they appeared to us of too abstruse and confined a nature for general estimation, and which we could not have gone into without almost doubling the expence; a circumstance we had to guard against, for the advantage of those of our readers to whom that part would have been totally uninteresting.

As to this edition, we presume it is no vain boast, that every exertion has been made to do justice to a work of such acknowledged merit. In the literary part, it has been the Proprietor's chief endeavour to preserve the spirit and accuracy of the Author, as far as could be done in translating from one language into another; and it is with gratitude he acknowledges, that those endeavours have been amply supported by the engraver; for the decorative executions of MILTON will remain a lasting monument of his abilities, as long as delicacy in the arts is held in estimation.

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BUFFON'S NATURAL HISTORY.

THE THEORY OF THE EARTH.

N EITHER the figure of the earth, its motion, nor its external connections with the rest of the universe, pertain to our present investigation. It is the internal structure of the globe, its composition, form, and manner of existence which we purpose to examine. The general history of the earth should doubtless precede that of its productions, as a necessary study for those who wish to be acquainted with Nature in her variety of shapes, and the detail of facts relative to the life and manners of animals, or to the culture and vegetation of plants, belong not, perhaps, so much to Natural History, as to the general deductions drawn from the observations that have been made upon the different materials which compose the terrestrial globe: as the heights, depths, and inequalities of its form; the motion of the sea, the direction of mountains, the situation of rocks and quarries, the rapidity and effects of currents in the ocean, &c. This is the history of nature in its most ample extent, and these are the operations by which every other effect is influenced and produced. The theory of these effects constitutes what may be termed a primary science, upon which the exact knowledge of particular appearances as well as terrestrial substances entirely depends. This description of science may fairly be considered as appertaining to physics; but does not all physical knowledge, in which no system is admitted, form part of the History of Nature?

In a subject of great magnitude, whose relative connections are difficult to trace, and where some facts are but partially known, and others uncertain and

obscure, it is more easy to form a visionary system, than to establish a rational theory; thus it is that the Theory of the Earth has only hitherto been treated in a vague and hypothetical manner; I shall therefore but slightly mention the singular notions of some authors who have written upon the subject.

The first hypothesis I shall allude to, deserves to be mentioned more for its ingenuity than its reasonable solidity; it is that of an English astronomer, (WHISTON) versed in the system of NEWTON, and an enthusiastic admirer of his philosophy; convinced that every event which happens on the terrestrial globe, depends upon the motions of the stars, he endeavours to prove, by the assistance of mathematical calculations, that the tail of a comet has produced every alteration the earth has ever undergone.

The next is the formation of an heterodox theologian, (BURNET) whose brain was so heated with poetical visions, that he imagined he had seen the creation of the universe. After explaining what the earth was in its primary state, when it sprung from nothing; what changes were occasioned by the deluge; what it has been and what it is, he then assumes a prophetic style, and predicts what will be its state after the destruction of the human race.

The third comes from a writer (WOODWARD) certainly a better and more extensive observer of nature than the two former, though little less irregular and confused in his ideas; he explains the principal appearances of the globe, by an immense abyss in the bowels of the earth, which in his opinion is nothing more than a thin crust that serves as a covering to the fluid it incloses.

The whole of these hypotheses are raised on unstable foundations; have given no light upon the subject, the ideas being unconnected, the facts confused, and the whole confounded with a mixture of physic and fable; and consequently have been adopted only by those who implicitly believe opinions without investigation, and who, incapable of distinguishing probability, are more impressed with the wonders of the marvellous than the relation of truth.

What we shall say on this subject will doubtless be less extraordinary, and appear unimportant, if put in comparison with the grand systems just mentioned, but it should be remembered that it is an historian's business to describe, not invent; that no suppositions should be admitted upon subjects that depend upon facts and observation; that his imagination ought only to be exercised for the purpose of combining observations, rendering facts more general,

and forming one connected whole, so as to present to the mind a distinct arrangement of clear ideas and probable conjectures; I say probable, because we must not expect to give exact demonstration on this subject, that being confined to mathematical sciences, while our knowledge in physics and natural history depends solely upon experience, and is confined to reasoning upon inductions.

In the history of the Earth, we shall therefore begin with those facts that have been obtained from the experience of time, together with what we have collected by our own observations.

This immense globe exhibits upon its surface heights, depths, plains, seas, lakes, marshes, rivers, caverns, gulphs, and volcanos; and upon the first view of these objects we cannot discover in their dispositions either order or regularity. If we penetrate into its internal part, we shall there find metals, minerals, stones, bitumens, sands, earths, waters, and matters of every kind, placed as it were by chance, and without the smallest apparent design. Examining with a more strict attention, we discover sunk mountains, caverns filled, rocks split and broken, countries swallowed up, and new islands rising from the ocean; we shall also perceive heavy substances placed above light ones, hard bodies surrounded with soft; in short, we shall there find matter in every form, wet and dry, hot and cold, solid and brittle, mixed in such a sort of confusion as to leave room to compare them only to a mass of rubbish and the ruins of a wrecked world.

We inhabit these ruins however with a perfect security. The various generations of men, animals, and plants, succeed each other without interruption; the earth produces fully sufficient for their subsistence; the sea has its limits; its motions and the currents of air are regulated by fixed laws: the returns of the seasons are certain and regular; the severity of the winter being constantly succeeded by the beauties of the spring: every thing appears in order, and the earth, formerly a CHAOS, is now a tranquil and delightful abode, where all is animated, and regulated by such an amazing display of power and intelligence as fills us with admiration, and elevates our minds with the most sublime ideas of an all-potent and wonderful Creator.

Let us not then draw any hasty conclusions upon the irregularities of the surface of the earth, nor the apparent disorders in the interior parts, for we shall