

# THE STATE-OF-THE-ART OF DINOSAUR RESEARCH

蒲含勇 等编著

Compiled by PU Hanyong and others



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# 河南古生物图鉴

AN ILLUSTRATED ENCYCLOPEDIA OF  
PALEONTOLOGY OF HENAN

蒲含勇 吕君昌 梁小菊 徐 莉 编著  
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## 内容提要

本书是一部系统性地介绍河南省古生物化石精品的图鉴文献。通过对化石的科学描述、图片展示、生物形象复原等多种形式，集中呈现了河南省地质博物馆及中国地质科学院地质研究所等研究团队对河南古生物化石资源调查、发掘、研究的最新成果。附录呈现了部分征集收藏标本的研究成果。本图鉴是了解河南省古生物化石资源状况，加强古生物化石保护、挖掘古生物化石价值、开展古生物科普教育、推动古生物文化传播等的重要参考书籍。

## ABSTRACT

This illustrated encyclopedia provides a systematic summary of the most valuable fossils from Henan Province, through the means of scientific description, pictorial illustration and paleontological reconstruction. This book focuses on and presents the latest results of research, investigation and excavation of paleontological fossil resources in Henan Province, conducted by the Henan Geological Museum, in cooperation with the Institute of Geology, Chinese Academy of Geological Sciences and other research teams. An addendum of fossil specimens collected by the Henan Geological Museum is also included in the encyclopedia. This book is intended to serve as an important reference source in showcasing the fossil resources and the status of paleontology research in Henan Province, strengthening fossil protection, exploring the scientific value of fossils, and in promoting and advancing popular science and culture of paleontological studies.

## 前言

很多年前,河南一直都以盛产恐龙蛋而著称,而恐龙骨骼化石却相对匮乏。但是近十年来,随着河南众多恐龙骨骼化石的发现,特别是汝阳盆地早白垩世晚期汝阳巨型蜥脚类恐龙动物群和潭头盆地晚白垩世晚期栾川动物群的发现,让人们河南的恐龙资源得以重新认识。

河南恐龙化石的发现历史非常悠久,但是很长一段时间以来,当地村民并不知道这些神奇的石头是化石,而是把它们当作了一味中药“龙骨”,进行小规模地开挖。虽然在1989年下半年,汝阳县三屯乡下河东村的村民曹宏欣把一块化石标本寄到中国科学院古脊椎动物与古人类研究所要求鉴定,董枝明研究员派其学生吕君昌对其进行实地调查,发现了大型蜥脚类恐龙的尾椎和部分股骨,但是由于种种原因,没有进行研究报告,所以甚至河南的地质部门也认为汝阳盆地没有产恐龙化石的中生代地层。直到2006年,河南省地质博物馆与中国地质科学院地质研究所合作,开始了系统性的大规模发掘,河南省丰富的恐龙资源才渐露真颜。经过近10年的勘查发掘、修复以及研究工作,河南省地质博物馆在以恐龙为主的古生物勘查发掘研究方面取得重大突破。在汝阳、栾川、义马、西峡等地新发现恐龙化石点243处,发掘恐龙化石点61处,打回化石石膏包(皮劳克)390件,修理出化石标本2463件,其中包括比较完整的恐龙、哺乳动物、鸟类等珍贵动物个体化石标本21具;重建了汝阳盆地地层层序,将原划为古近系的地层分解,新建立了早白垩世下河东组、郝岭组及晚白垩世早期上东沟组(徐莉等,2012);命名了早白垩世晚期“汝阳巨型蜥脚类恐龙动物群”(Lü et al., 2009),该动物群填补了中国乃至世界早白垩世晚期到晚白垩世早期之间恐龙动物群的空白,对大型蜥脚类恐龙和结节龙类等的分布、迁徙、演化研究具有重要的科学价值;命名了晚白垩世晚期“栾川动物群”(Lü et al., 2008),为我国晚白垩世以小型兽脚类恐龙——哺乳动物为组合的动物群增添了一个新成员;增补了南阳恐龙蛋化石群中的恐龙骨骼化石,在西峡盆地和夏馆盆地白垩纪地层中新发现了恐龙及龟鳖类化石点47处,已研究命名的恐龙有蜥脚类河南宝天曼龙(Zhang et al., 2009)、伤齿龙类恐龙河南西峡龙(Lü et al., 2010)等,发现了河南第一个南雄龟类化石(Tong et al., 2012),这些新发现丰富了南阳恐龙蛋化石群国家级自然保护区的科学内涵,对晚白垩世恐龙生殖习性与演化研究提供了重要素材;在义马盆地侏罗纪地层中发现了4种恐龙足迹化石、1种鸟脚印和1种鳖类化石,其中,

徐氏张北足迹是在河南境内发现的第一个侏罗纪恐龙脚印（吕君昌等，2007），丰富了以古植物化石为主的“义马生物群”。迄今，已研究命名了12种新的恐龙，其他大量的化石正在修复和研究当中。截至目前，河南的恐龙发现有16科23属23种，仅河南省地质博物馆就发现21属20种，化石具有产地集中、规模较大、埋藏密集、保存完好等特点。从目前发现的化石来看，河南已经成为名副其实的恐龙化石资源大省。目前，这些精美的古生物标本均陈列在河南省地质博物馆，吸引了数以百万计的观众慕名参观。部分精美标本还多次应邀赴日本、美国、加拿大、韩国、香港等国家和地区以及北京、上海、常州等的自然类博物馆展出，引起了很大反响。

本图鉴主要对近10年来河南相关动物群、古生物属种等研究成果，以及其他部分精品标本做出系统介绍。同时，列附录对近年来征集收藏研究标本做出介绍。

除特别注明外，本书中全部正型标本及其他标本均珍藏于河南省地质博物馆。

## PREFACE

Henan is famous for its rich findings of dinosaur eggs. However, dinosaur skeletons in Henan Province were thought to be rare. In the last ten years, there have been many ground-breaking publications and announcements of dinosaur discoveries in Henan, especially the discovery of the Early Cretaceous Ruyang Gigantic Sauropod Dinosaurian Fauna and the Late Cretaceous Luanchuan Fauna from Tantou Basin, which have completely changed our understanding of Henan's dinosaur resources.

Henan has a long history of dinosaur discoveries. However, over a very long period of time, the local residents and villagers had carried out small scale excavations of dinosaurs in Henan Province, and did not know what they actually were. They used the fossils as a part of the traditional Chinese medicine and called them "the dragon bones". In the second half of 1989, Cao Hongxin, a villager from Xiahedong Village in Santun Town, Ruyang, sent a piece of fossil sample to IVPP of CAS for identification. Professor Dong Zhiming sent his student, Lü Junchang, to conduct field work and excavations. Although many sauropod dinosaur bones were discovered (mainly caudal vertebrae and part of a femur), the excavation results were never officially reported or published due to a variety of reasons. Consequently, even some geological institutions and agencies in Henan were unaware of the Mesozoic strata in Ruyang that contained dinosaur fossils. It was not until 2006, when a joint research team was formed by Henan Geological Museum and the Institute of Geology, Chinese Academy of Geological Sciences, that the fossil localities were systematically excavated. Since then, Henan Province has gradually become well-known for its rich dinosaur fossils. After nearly ten years of excavation, restoration and research projects, a number of significant results were accomplished in dinosaur-based paleontological excavations by Henan Geological Museum. In total, 243 dinosaur fossil locations have been found in the Ruyang, Luanchuan, Yima, and Xixia regions, of which 61 sites were excavated. Out of the 390 packaged plaster jackets, 2,463 specimens were revealed, including 21 relatively complete holotype skeletons of dinosaurs, mammals and birds. The succession of strata of the Ruyang Basin was reconstructed and the Eocene strata were reclassified into different formations, including the Xiahedong Formation and Haoling Formation from the Early Cretaceous, and the Shangdonggou Formation (Xu et al., 2012) from the early Late Cretaceous. The discovery of the Ruyang Gigantic Sauropod Dinosaurian Fauna (Lü et al., 2009) is a new dinosaurian fauna from the late Early Cretaceous to early Late Cretaceous, which contains crucial information of the evolutionary process of the gigantic sauropods, nodosaurs, and the paleoecology and environment during that period. It also provided important information on the particular geological time of the fossil-bearing strata, the regional correlation and

stratigraphic characteristics. Additionally, the discovery of the Luanchuan Fauna contains extremely rich species, similar to other Late Cretaceous faunas in China, which provides vital information and evidence for studying paleobiological evolution, paleogeography and the extinction of the Late Cretaceous dinosaurs, and for further understanding the emergence of mammals. Other findings include 47 dinosaur and turtle fossil sites in the Cretaceous formations from the Xixia Basin and Xiaguan Basin, adding more dinosaur species in the fauna of Nanyang dinosaur eggs. Other named dinosaurs include the sauropod dinosaur *Baotianmansaurus henanensis* (Zhang et al., 2009), troodontid dinosaur *Xixiasaurus henanensis* (Lü et al., 2010) and the first Nanhsiung chelyid specimen in Henan, named *Yuchelys nanyangensis* (Tong et al., 2012). The above discoveries have provided crucial evidence in the scientific research of the National Park of Nanyang Dinosaur Eggs, and produced key knowledge on the reproduction and evolution of the dinosaurs in the Late Cretaceous. Furthermore, four kinds of dinosaur footprints, one bird footprint and one turtle fossil were discovered from the Jurassic formation at Yima Basin, which include *Changpeipus xuiana* (Lü et al., 2007), as the first Jurassic dinosaur footprints found in Henan, providing strong evidence for the richness and biodiversity of the plant-dominated Yima Biota. So far there have been 12 new dinosaurs named and large quantities of fossils are under reconstruction and study. In total 16 families, 23 genera and 23 species of dinosaurs have been discovered, of which 21 genera and 23 species were discovered by Henan Geological Museum. The fossils were densely buried at concentrated locations and under excellent preservation conditions. For the quantity of the fossils found, Henan has officially become a province with abundant dinosaur fossil resources. These specimens are being exhibited in Henan Geological Museum and have attracted millions of visitors, and some of the best specimens have been exhibited internationally in countries like Japan, United States, Canada and Korea, as well as in regions like Hong Kong and in cities like Beijing, Shanghai and Changzhou, with tremendous positive publicity.

This illustrated encyclopedia is focused on the research results of the related faunas from the last ten years. It summarizes paleontological species and genera from Henan, with a systematic introduction of the most valuable holotypes and specimen collections in Henan Geological Museum. Meanwhile, it also includes an addendum of specimens collected and acquired for research purposes in recent years.

Unless specifically indicated, all holotypes and specimens are housed in Henan Geological Museum.

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