



古生物图鉴

中国恐龙 ①

中国境内发现的部分恐龙及古鸟化石骨骼与生物形态复原图

赵闯 / 绘 杨杨 / 编 王丽霞 / 策划 苗德岁 / 译 啄木鸟科学小组作品

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A Pictorial Guide to Paleontology Dinosaurs of China (Volume I)

skeletal and life reconstructions of some dinosaurs and birds fossils found in China

Artwork by ZHAO Chuang; Text by YANG Yang; Conception by WANG Lixia; English Translation by MIAO Desui
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序

看到了赵闯、杨杨合作完成的《古生物图鉴》系列丛书的初稿，由衷感到高兴。我认识赵闯已有多年。尽管见面次数不多，但他与我们研究团队的合作始终未断。在我的印象中，他作为一名自学成才的美术青年和化石复原艺术的痴迷者，无论过去还是现在，都一直保持着一股执着、谦逊、纯真的天性，外加一丝腼腆气质和艺术家常有的长发蓬松的外形。认识杨杨的时间较晚，但从一开始我似乎就有一种直觉：她的文字与赵闯绘图天赋的组合，堪称一种完美的搭配。

赵闯最初给我印象最深的，是他完成化石艺术复原的惊人的速度。我们请他做的复原，通常是要等到文章被刊物接受后，才会想到要做一个复原，这时留给我们的时间往往都不多了，再加上既然是科学的复原，反复地修改自然也是必不可少的，然而他每次都没有让我们失望。

多年来，赵闯完成了大量的化石的复原作品，尽管许多已经出现在国内外重要的刊物、杂志、网站上等，但多零星出版。最近能够看到他积攒多年的作品能够一本本与读者见面，这无疑了他的一桩心愿，自然令许多喜爱他作品的读者感到欣慰，同时我也为他与杨杨成功的合作感到高兴。

本书的文字灵巧精致，然而在我看来，更为重要的是还有科学的准确性。书中采用的化石骨骼复原多基于古生物学家们的论文，而彩色的生活复原也尽可能地采纳了科学研究的最新的进展。

化石是亿万年生物演化的残迹，却又是人类认识这一伟大生命历程的唯一线索。它们如同繁枝细叶装扮了穿越历史时空的生命之树。这棵巨树，经历了自然的洗礼，如今留给古生物学家的已差不多只有苍白的枯枝烂叶，而且还散落四方，因此，化石带给生物学家的常常是一种缺憾美。

作为专职的古生物工作者，我们常常被问到的一个问题是：这些灭绝动物的颜色是如何得知的？不久以前，我们一般都会坦诚相告：这缺少直接的证据，多半来源于想象，最多也只能依靠一些间接的推测。

然而，最近几年古生物学研究的一项突破带给了我们希望：直接反映鸟类和恐龙羽毛颜色的色素体在化石中被发现了！虽然相关的科学研究才刚刚起步，但从此为远古生命的复原涂抹上了科学的色彩。在科学证据的基础上，有了赵闯这样一批艺术家的加工，我们描绘的地球生物演化的故事就变得更加可信，也愈发精彩。

中国科学院古脊椎动物与古人类研究所所长
中国科学院院士
美国科学院外籍院士

周忠和

Foreword

I am thrilled to have seen this book's manuscript by Zhao Chuang and Yang Yang, one of a number of books to be published under the series title of "A Pictorial Guide to Paleontology". I have known Mr. Zhao for some years. Although we have not met very often, I know that he has collaborated with our research group intermittently. I have the impression that he is a self-taught young artist who is crazy about artistic reconstructions of fossils, and that he has remained persevering, modest, and genuine by nature, though a tad shy and with untidy long hair that is often associated with artists. I got to know Yang Yang more recently, and from the very beginning I have had the gut feeling that her writing talent matches Mr. Zhao's artistic talent like peanut butter and jelly—a perfect combo!

Initially what Mr. Zhao impressed me the most was his amazing speed in finishing an artistic reconstruction of a given fossil. Ordinarily we do not ask him to paint a reconstruction until our manuscript is accepted by a journal, and by then we are necessarily pressed by the deadlines. Moreover, his reconstruction must be based on scientific evidence and thus the back-and-forth discussions between him and us are unavoidable, thus consuming a lot of time. However, he has never let us down, not even once.

In past years, Mr. Zhao has painted numerous artistic reconstructions of fossils, which have appeared in various journals, magazines, and websites both at home and abroad. However, bringing many of his paintings in book forms to his readers will undoubtedly fulfill his long cherished wishes, thereby pleasing many of his fans. Therefore, I feel very happy for Mr. Zhao and Ms. Yang on their successful collaboration.

The writing in this book is exquisitely beautiful, and yet I treasure the book more for its scientific accuracy. Many of the skeletal reconstructions in the book are strictly based on paleontological researches, whereas the colorful artistic reconstructions are also constrained largely by the evidence drawn from the most up-to-date advances in science.

Fossils are the relics of evolution of life in the past hundreds of millions of years, and yet they are the only clues for us to decipher the great evolutionary trajectories. They are like the branches and leaves that fell off from the Tree of Life that has traveled through the time and space. This great Tree of Life has undergone the trials and tribulations in Nature and left paleontologists with its dead branches and broken twigs, which are scattered all over the world. Thus, paleontologists often feel hopelessly inadequate.

As professional paleontologists, we are often faced with this question: How do you know the colors of these extinct animals? Until recently, we were generally frank about it: we lack direct evidence, we have our educated guess, and at the very best we imagine them based on circumstantial evidence.

However, a dim light of hope came from a breakthrough in paleontological research in the past few years: the melanosomes were discovered that are directly linked to the feather colors of birds and dinosaurs. Although the related studies just began, they may hold the promise to provide more solid scientific basis for reconstructing the colors of ancient life. With scientific evidence like this, artists such as Mr. Zhao will be able to use their magic brushes to make our stories of evolution of life on earth not only more vivid but also more credible.

ZHOU Zhonghe

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前言

过去 20 年，古生物已经不仅仅作为一种科学研究的对象停留在人类的探索之中，而是更加广泛地成为一种文化行为在全世界兴起。大量的电影、游戏、主题公园、博物馆以及模型、玩具、电视节目都在不断地以古生物尤其是恐龙作为主题进入我们的生活之中。但是，由于古生物学是一个相对小众但又专业性很强的研究领域，文化产品在研发过程中很容易出现各种瑕疵。为此，建立相对丰富的知识点系统和较大规模的图片资料库是非常有必要的。过去几年，我和科学画家赵闯以微薄之力启动了一个研究课题“达尔文计划——生命美术工程”，旨在通过较长的时间追踪和整理全球古生物学研究的最新进展，将全球最新发现的重要化石和主流科学家的最新研究成果进行图形化，建立相对完整的古生物化石科学复原图片库和简明知识库。今天大家看到的这套《古生物图鉴》系列丛书，就是我们过去工作的部分成果。

《古生物图鉴》作为“达尔文计划”整个课题的一个出版项目，在我们的计划中是一个长期创作、陆续出版的过程。本次出版的第一辑共有 5 个分册，分别以“中国恐龙（上、下）、世界恐龙、翼龙、史前水栖爬行动物”作为简单分类，共计收入了 300 多种 600 多张具有代表性的中生代古生物化石骨骼复原图和生物形态复原图，这些图片都是科学画家赵闯一个人依据化石研究者的论文观点或者在科学家的指导下，凭借自己对古生物学的认识辛勤创作的，其中相当一部分作品是作为论文的配图发表在包括《自然》、《科学》、《古生物学报》等专业期刊上。考虑到本书是一部纯粹的古生物化石科学复原图鉴，我尽可能地减少了本套丛书的文字部分，以免过多的主观描述影响了本书的严谨性。我只是根据收录物种的学名按图索骥找到原始的研究文献，将每一个物种的标准中文名称、学名、命名者的资料进行收集，再根据论文的观点整理出化石产地、基本体型、生存年代、食性等基本特征。

2012 年 12 月 16 日，国家古生物化石专家委员会办公室组织了有多位著名古生物学家参加的专家评审组对《古生物图鉴》丛书进行了专业评审。诸位评审专家对此套系列丛书给予了高度肯定，认为该丛书是中国古生物领域乃至整个科普教育领域的原创性成果，代表了中国原创科普作品的国家水平。专家的鼓励的确令人开心，但他们在鼓励的同时也给本丛书提出了诸多改进意见，希望在出版之前能够进一步完善。在评审会之后，我与赵闯依据评审意见对书稿进行了修改，随后又将修改后的书稿送呈多位在国际上享有盛誉的古生物学家进行审定。他们是中国科学院古脊椎动物与古人类研究所的周忠和研究员、董枝明研究员、徐星研究员、汪筱林研究员、李淳研究员以及中国地质科学院地质研究所的季强研究员、姬书安研究员

等。在此，由衷感谢各位师长的耐心指导和无私奉献。

考虑到非中文的读者需求，本丛书采用中、英文双语出版。英文部分的翻译由国际知名的古生物学家、美国堪萨斯大学自然历史博物馆苗德岁教授亲自担纲。在此，十分感谢苗德岁老师在百忙中亲自翻译本书，作为一名享有盛誉的学者，愿意为后生晚辈的拙作亲自翻译并且逐条修订，这种提携晚辈的精神不仅令我辈感动，更是今后学习的楷模。

中国科学院院士、美国科学院外籍院士、中国科学院古脊椎动物与古人类研究所所长周忠和博士不仅亲自审定本丛书的部分内容，而且在本丛书定稿后又亲自作序，向读者推荐本丛书，使得本书陡增光辉，再一次鞠躬致谢。

在本丛书出版的过程中，国家古生物化石专家委员会办公室副主任王丽霞研究员付出了太多的劳动。她在本丛书创作初期就积极参与选题策划、定稿之后又全力组织专家进行内容审定，在她的不懈努力推动下，本书得以顺利完稿并付梓印刷。此情此景，言语远远不够表达我的敬意。唯有心怀感激，长存于心。

近年来，全球古生物化石研究日新月异，大量前人的研究成果转瞬之间就被后来发现的证据推翻，加之编者水平所限，书中难免出现不当之处甚至一定的错误，恳请专家在发行之后一一指出，我们计划每两年对本书做一次修订，在力所能及的范围内尽可能做到最新、最好。



2013年1月23日北京

Preface

In the past 20 years, prehistoric life was no longer just the scientific research object for human exploration, and rather it has given rise to a worldwide cultural phenomenon. Numerous movies, games, theme parks, museums, models, toys, and TV programs have brought these extinct lives, especially dinosaurs, back into our daily lives. However, because paleontology is such an esoteric and specialized discipline that the aforementioned media and entertainment products are often apt to deviate from the scientific accuracies. Therefore, it is necessary to build up a relatively comprehensive information system and large scale database of visual materials. In the last few years, Mr. Zhao Chuang and I have initiated a research project entitled “Project Darwin: A life science art project” to follow and collect the global paleontological advances and artistically reconstruct the important fossils described by paleontologists, thereby establishing a relatively complete visual database of life reconstructions of those fossils and a concise database of the related information. This set under the series title of “A Pictorial Guide to Paleontology” represents a part of our past efforts.

“A Pictorial Guide to Paleontology” as a publication project under the whole “Project Darwin: A life science art project” will be a long-term and continuing process of creating, writing, and publishing. The first set contains five volumes, i.e., “Dinosaurs of China” (volume I and volume II), “Dinosaurs of the World”, “Pterosaurs”, and “Prehistoric Aquatic Reptiles”. Altogether these five volumes contain over 300 kinds (a total of more than 600 pictures) of the skeletal and life reconstructions of the representative Mesozoic vertebrate fossils. All of these pictures were painted by Mr. Zhao Chuang, based on original researchers’ viewpoints or under their guidance as well as out of his own inspirations. A considerable number of these pictures have been published along with the original research publications in the professional journals including *NATURE*, *SCIENCE*, and other well-respected paleontological journals. Considering that these volumes are purely scientific reconstructions of fossils, I have refrained from injecting too much technical verbiage into the books that might adversely affect their well-knittedness. For each species, I have only listed its Chinese name, Latin (taxonomic) name, locality information, geological age, body size, diet, and other main features by sieving through the original literature.

On December 16th, 2012, the Office of Paleontological Experts Committee of China organized a review board meeting to evaluate the scientific merit of these books. A number of internationally renowned Chinese paleontologists attended the meeting and gave high marks to these books. They consider these books of high quality and originality that represent one of the best popular science books in China. We are thrilled by their encouragements and more importantly we benefit greatly from their constructive criticism. Based on their suggestions, Mr. Zhao and I have revised the manuscript and pictures. Then we sent our revisions to the following people for their final approvals: Drs. Zhou Zhonghe, Dong Zhiming, Xu Xing, Wang Xiaolin, and Li Chun at the Institute of Vertebrate

Paleontology and Paleoanthropology, Chinese Academy of Sciences, and Drs. Ji Qiang and Ji Shu'an at the Institute of Geology, the Chinese Academy of Geological Sciences. We would like to take this opportunity to thank all of these people for their patient guidance and selfless contribution.

With those who do not read Chinese in mind, we have decided to publish these books in bilingual forms (in both Chinese and English). All English texts were translated by Dr. Miao Desui except those that only list species' Latin (taxonomic) name, locality information, geological age, body size, and diet. Dr. Miao is an internationally well-known vertebrate paleontologist at Biodiversity Institute and Natural History Museum, University of Kansas. Despite his busy schedule, he agreed to translate and even revise these books. We are deeply moved by his generosity in helping young people and we will learn from him.

We are immensely honored by Dr. Zhou Zhonghe, a member of the Chinese Academy of Sciences, Foreign Associate of the US National Academy of Sciences, and Director of Institute of Vertebrate Paleontology and Paleoanthropology, the Chinese Academy of Sciences, who not only reviewed part of these books but also wrote the Foreword to these books. We again thank him for his guidance and his recommendation of these books to readers.

In the course of publishing these books, Ms. Wang Lixia, Deputy Director of the Office of Paleontological Experts Committee of China, has contributed a great deal, from the books' conceptualization to subject selection. She also invited the review board members to review these books. Only with her tireless promotion have these books been written and published. Words simply cannot express our indebtedness to her, and we will remember this forever in the bottom of our hearts.

In recent years, on a global scale paleontological studies advance rapidly, and many research finds are soon overturned by newer discoveries. Also limited by our abilities, errors may undoubtedly remain in these books. We hope readers will bring them to our attention. We plan to update and revise the books every two years, therefore making them as updated as possible.

YANG Yang

January 23rd, 2013, Beijing.

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恐龙

1. 什么是恐龙

我们常常提及的恐龙 (Dinosaur)，在生物系统分类上称作恐龙总目 (Dinosauria)。恐龙总目是一群古老的四足爬行类动物，它们曾在陆地上生存了将近 1.65 亿年，是当时陆地上的统治者。

目前发现的生存年代最早的恐龙诞生于距今约 2.3 亿年前的中三叠世，到距今约 6500 万年前白垩纪末的灭绝事件发生时，非鸟型的恐龙类就从地球上消失殆尽了。

然而，依据现在的主流观点，一部分兽脚亚目 (Theropoda) 的恐龙，却演化成了现代的鸟类，至今还生活在人类身边。因此从严格的意义上来说，恐龙并没有完全灭绝。

恐龙在动物分类学中被归于蜥形纲 (Sauropsida) 下双孔亚纲 (Diapsida) 的初龙类 (Archosauria)，与鳄类、翼龙类 (Pterosauria) 有亲缘关系，都是初龙类演化支。该演化支兴起于二叠纪末期，在三叠纪成为占据统治地位的陆栖脊椎动物群。

与恐龙生活在同一个时期的、形态各异的爬行动物，还有翼龙目、鱼龙目 (Ichthyosauria)、蛇颈龙目 (Plesiosauria)、沧龙科 (Mosasauridae) 等，很多人会将它们误以为是恐龙。其中，翼龙目的关系和恐龙更近一些，都是主龙类的演化支，但它们在三叠纪时，也开始分别向不同的方向演化。而鱼龙目、蛇颈龙目、沧龙科等，它们并不属于初龙类，它们是另外一些完全不同的、生活在水中的水栖爬行动物。

恐龙是中生代的优势物种，它们遍布世界的各大洲，包括如今终年被冰雪覆盖的南极洲。到目前为止，人类发现的恐龙化石已经超过 1000 个种，无论是从它们的体型特征还是主宰地球的时间来看，它们都是最

成功的陆生动物。

日益增多的恐龙化石的发现，向我们展示了恐龙精彩纷呈的多样性。尽管如此，在恐龙身上我们还是能够看出一些共同的特征。比如恐龙的头骨 (Cranium) 与鳄类一样呈双孔型；四肢垂直于体侧；股骨 (Femur) 的股骨头与骨干成直角；髌臼 (Acetabulum) 穿透成孔；肱骨 (Humerus) 有低矮的三角嵴 (Deltpectoral crest, 让胸锁三角肌肉附着的部分)，肠骨 (Ilium) 后部有个突出区块；胫骨 (Tibia) 末端边缘宽广，有个往后的凸缘；距骨 (Astragalus) 有个明显上突，与胫骨契合等。这些特征都是恐龙的重要特征。

上述特征虽然普遍存在于恐龙身上，但其中只有一条是区别恐龙与其他爬行动物的简单易行的方法，即恐龙的四肢位于躯体的正下方，形成一个像哺乳动物那样完全直立的步态，其中很大一部分能够利用后肢支撑着身体直立行走，而其他爬行动物的四肢却位于身体的两侧，这使得它们只能笨拙地匍匐前进。

必须指出，某些非恐龙的初龙类也独自发展出直立的步态，例如劳氏鳄目 (Rauisuchia)，但它们的臀窝朝下，股骨往上嵌入臀窝，和恐龙以及哺乳动物的直立行走方式并不一样，是自成一体的“柱状直立方式”。

2. 恐龙的分类

恐龙都分为哪些类别？知道了恐龙的分类会让我们更加了解恐龙。不过，在介绍恐龙的分类之前，我们最好先了解一下爬行动物的分类。

在爬行动物头骨侧面、眼眶后面的颞部存在的孔，被称之为颞颥孔 (Temporal fenestrae)。而爬行动物的分类通常依据的就是其有无颞颥孔，以及颞颥孔的位

置和数量。据此，爬行动物被分为四类。

第一类，没有颞颥孔，它们也被称作无孔类，是一类比较古老的爬行动物。现在的龟鳖就属于这一类。

第二类，头骨有一对颞颥孔，颞颥孔位置靠下，位于鳞骨和眶后骨的下方，被称为下孔类，似哺乳爬行动物就属于这一类。

第三类，也有一对颞颥孔，不过孔的位置靠上，位于鳞骨和眶后骨的上方，被称之为调孔型头骨，蛇颈龙 (*Plesiosaur*) 等就属于这类。不过，后来古生物学家认为这类其实是双孔型失去侧颞颥孔后演化而来的。

第四类，头骨每侧有两个颞颥孔，位于鳞骨和眶后骨的上方和下方，这类爬行动物被称为双孔类，它包含的种类最多，大部分爬行动物，都属于这一类，包括恐龙。

1887年，英国古生物学家哈利·丝莱 (Harry Seeley) 根据骨盆 (又称腰带) 的构造不同，将属于双孔类爬行动物的恐龙分为两大类：蜥臀目 (*Saurischia*) 和鸟臀目 (*Ornithischia*)，这并不是我们俗称的肉食性恐龙和植食性恐龙，因为除了蜥臀目下的部分兽脚类恐龙是肉食性恐龙之外，其余全部属于植食性恐龙。

蜥臀目恐龙和鸟臀目恐龙的区别在于，蜥臀目的腰带从侧面看，耻骨在肠骨下方向前延伸，坐骨则向后延伸，呈三射型，这样的结构与蜥蜴相似；而鸟臀目的腰带，其肠骨前后都大大扩张，耻骨前侧有一个大的前耻骨突，伸在肠骨的腹前侧，后侧更是大大延伸，与坐骨平行伸向肠骨后下方。因此，骨盆从侧面看是四射型。

但不论是蜥臀目还是鸟臀目，它们的腰带在肠骨、坐骨、耻骨之间留下了一个小孔，而这个孔在其他各个目的爬行动物中是没有的。正是这个孔表明，与所有其他各个目的爬行动物相比，被称为恐龙的这两个目之间有着最近的亲缘关系。

不过，随着越来越多的恐龙化石出现在人类面前，这种传统的分类方式似乎正在接受不小的挑战，因为比如镰刀龙类 (*Therizinosauroidea*)、驰龙类 (*Dromaeosauridae*) 等恐龙，它们的腰带既不是三射型的，也不是四射型的，并不符合我们上述的分类特征，但是目前恐龙的分类依然沿用着这两大类，并没有新增。

在恐龙这两大类别中，蜥臀目主要包括兽脚类 (*Theropoda*) 和蜥脚形类 (*Sauropodomorpha*) 两大类。兽脚类大都是两足行走的肉食性恐龙，它们长

有锋利的尖爪和锯齿状的牙齿。我们所熟悉的霸王龙 (*Tyrannosaurus*)、异特龙 (*Allosaurus*) 等都是兽脚亚目。而我们刚刚提到的镰刀龙类、驰龙类，甚至是鸟类也都被归入到了兽脚亚目中。很多化石证明，一些小型兽脚亚目和鸟类的关系非常近。而蜥脚形类是一种大型的、四足行走的植食性恐龙，包括原蜥脚类 (*Prosauropoda*)，如禄丰龙 (*Lufengosaurus*) 等，以及蜥脚类 (*Sauropoda*)，比如马门溪龙 (*Mamenchisaurus*)、梁龙 (*Diplodocus*) 等。它们的颈部都很长，四肢粗壮，身体庞大。

鸟臀目 (*Ornithischia*)，分成两个演化支：装甲亚目 (*Thyreophora*) 和新鸟臀类 (*Neornithischia*)。装甲亚目包括剑龙下目 (*Stegosauria*)，比如剑龙 (*Stegosaurus*)，以及甲龙下目 (*Ankylosauria*)，比如甲龙 (*Ankylosaurus*)。新鸟臀类包括头饰龙类——角龙下目 (*Ceratopsia*)，比如三角龙 (*Triceratops*)，及肿头龙下目 (*Pachycephalosauria*)，比如肿头龙 (*Pachycephalosaurus*)，以及鸟脚下目 (*Ornithopoda*)，例如鸭嘴龙科 (*Hadrosauridae*) 的埃德蒙顿龙 (*Edmontosaurus*)，它们都是植食性恐龙。

3. 恐龙的骨骼

想要详细地了解恐龙，我们不能不对它们的骨骼有一个清晰的认识，这是我们真正了解恐龙特征的重要途径。

在恐龙的骨骼化石中，头骨是最为重要的，它往往能为研究人员带来最为关键的信息。完整的头骨包括头颅骨 (*Cranium*) 和左、右两个下颌骨 (*Mandibles*)。除了鼻孔和眼眶外，恐龙的头骨上还有很多别的孔，包括眶前孔，颞窗，下颌孔等，它们都是为了加强肌肉附着，减轻头骨的重量。而头骨上骨头与骨头之间的缝接，称为骨缝 (*Suture*)。头骨的描述是按区域进行的：“前”指的是吻部，“后”指的是枕部，“背”指的是顶部，“腹”指的是髌部。

除了头骨，我们在描述恐龙的时候通常还会提到颈椎 (*Cervical vertebrae*)、背椎 (*Dorsal vertebrae*)、荐椎 (*Sacral vertebrae*) 和尾椎 (*Caudal vertebrae*)，这些都属于脊椎骨，还有肩带 (*Pectoral girdle*)，前肢 (*Forelimb*)，腰带 (*Pelvic girdle*) 和后肢 (*Hindlimb*)，这些属于附肢骨。

通过对这些骨骼的描述，能够让我们对某一种恐龙的外形及特性有具体的了解。

除了知道骨骼的名称，还有一点必须要注意，那就是我们在描述骨骼的时候常常会使用到一些方位词，这些方位词是按照将一只恐龙的中轴骨骼平放、四肢垂直的摆放姿势来确定的。这样一来，在描述时使用到的方位词比如“前”指的就是向吻端 (Cranial)，“后”指的是向尾末 (Caudal)，“背”指的是上，“腹”指的是下。而在描述四肢骨的特有方位词中，近端 (Proximal) 指的是肢骨靠近身躯的一头，而远端 (Distal) 指的是肢骨远离身躯的一端。

4. 恐龙的演化和分布

恐龙诞生于距今大约 2.3 亿年前，消失在距今大约 6500 万年前，在地球上生活了 1.65 亿年之久，是当时的陆地统治者。它们生活的时代被称为中生代，分为三叠纪、侏罗纪、白垩纪三个时期。

三叠纪中期是恐龙诞生的时期，那时候所有的大陆都还连在一起，被称为盘古大陆。盘古大陆异常辽阔，温暖而湿润的海风侵入不到大陆中心地带，那里形成了一片巨大的沙漠，炎热、干燥，但是大陆的大部分地方气候都还不错。

良好的气候环境也让各种动物在经过二叠纪大灭绝的灾难之后，渐渐开始复苏。槽齿类 (Thecodontia) 比如波斯特鳄 (*Postosuchus*)、亚利桑那龙 (*Arizonasaurus*)、链鳄 (*Desmotosuchus*)，似哺乳爬行动物如扁肯氏兽 (*Placerias*) 正在成为世界的主宰者。而恐龙就诞生于这一时期，在生命初期，它们显得相当弱小。

到了三叠纪末期，世界有过一次大灭绝事件。陆地上大部分物种都在这次事件中灭绝了，包括当时统治世界的大部分槽齿类动物，以及大部分植物，海洋中几乎一半的物种也都没能幸免。可是为数不多的、弱小的恐龙却在大灾难中活了下来。进入到侏罗纪时期，世界上突然多了很多恐龙，它们似乎在瞬间就成为了世界的主宰者。

从晚侏罗世开始到早白垩世，恐龙发展进入了黄金时代。强大的恐龙遍布各个大陆，它们几乎丧失了所有对手，族群内部植食性恐龙与肉食性恐龙的竞争成为了世界上最激烈的斗争。它们以无与伦比的生命

力，让自己成为当时地球上数量最多、种类最繁盛、地位最主要的陆地居民。

截至目前，科学家在全世界都发现了大量的恐龙化石，包括南极洲和北极地区，因此我们可以推测，在中生代，恐龙是一种全世界分布的优势物种。

5. 中国恐龙的研究

中国是目前世界上恐龙第一大国，在恐龙发掘与研究方面取得了非常重要的成果。

中国真正大型的恐龙发掘源起于 1922 年 4 月 21 日的“美国自然史博物馆远征探险计划”。此次考察是由非常熟悉亚洲情况的美国动物学家安德鲁斯 (Roy Chapman Andrews) 发起的，他率领 40 余人的考察团，外加 5 部四轮动力汽车及 75 匹骆驼，从河北省张家口出发，开始了辉煌的“美国自然史博物馆远征探险计划”。考察团在内蒙古二连浩特进行了两次发掘，发现了姜氏巴克龙 (*Bactrosaurus johnsoni* Gilmore, 1933)、亚洲古似鸟龙 [*Archaeornithomimus asiaticus* (Gilmore, 1933) Russell, 1977] 以及一些恐龙蛋等，开启了中国恐龙发现的大幕。

此后，中国开始了数量众多的恐龙化石挖掘活动，包括中美恐龙考察 (1985)，中国—加拿大恐龙计划 (1986-1990)，中国—日本丝绸之路恐龙考察 (1992-1993)，中国—蒙古—日本蒙古高原恐龙计划 (1995-1999)，中国—比利时王国内蒙古恐龙考察 (1995-2000) 等，这些重量级的恐龙考察发掘活动，让中国恐龙化石的发现呈现出井喷的态势，使得中国成为恐龙发现重地。特别是在这期间中国辽宁出土了大量带有羽毛、保存完好的恐龙化石，引起了世界恐龙专家的高度关注。

到目前为止，中国已经成为世界第一恐龙大国。据 2009 年的统计，中国出土的恐龙化石，已经超过 150 个种，位居世界第一。

Dinosaur

1. What are dinosaurs?

Dinosaurs, taxonomically also known as Dinosauria, are a group of prehistoric land reptiles that reigned on earth for nearly 165 million years. The earliest dinosaurs found so far are from the Middle Triassic, about 230 million years ago. All non-avian dinosaurs were wiped out by the end-Cretaceous mass extinction event about 65 million years ago. The current mainstream view holds that some theropod dinosaurs gave rise to modern birds, which are still with us today. Therefore, technically, dinosaurs have not become extinct. In zoological taxonomy, the Dinosauria is ranked under Class Sauropsida, Subclass Diapsida, Infraclass Archosauria, and is related to Crocodylia and Pterosauria. The Dinosauria, Crocodylia, and Pterosauria all belong to the archosaurian clade, which arose toward the end of the Permian and became the dominant terrestrial vertebrate fauna in the Triassic.

Along with dinosaurs lived various types of reptiles such as pterosaurs, ichthyosaurs, plesiosaurs, and mosasaurs. They are often mistaken for dinosaurs. Among them, pterosaurs are more closely related to dinosaurs, and both belong to the archosaurian clade. However, they began to diverge very early in the Triassic. In contrast, ichthyosaurs, plesiosaurs, and mosasaurs are not even archosaurians, and they are completely different types of reptiles that lived in marine waters.

Dinosaurs were the dominant creatures during the Mesozoic, and have been found on all continents including the snow-and-ice--capped Antarctica. To date, more than 1,000 species of dinosaurs have been named. They were

the most successful land animals in terms of both their spectacular, varied forms and their long dominance on earth.

Increasing dinosaur finds have shown its incredible diversity, but some general commonalities in its characteristics are evident. For example, all dinosaurs have a diapsid cranium, just as crocodylians do; the four limbs are held directly underneath the body and form a fully-erected posture; the head of femur sticks out at a right angle to the shaft (diaphysis); there is an opening in the hip socket (acetabulum); the humerus has a low deltopectoral crest to which the deltoid muscle is attached; a protruding area is located on the back of the ilium; the distal end of tibia is wide with a backward flange; the astragalus has a distinct tubercle (apophysis) that fits into the tibia. All these features are characteristic of dinosaurs.

Although these features are common among dinosaurs, only one of them is the most distinct and easiest to tell dinosaurs apart from all other reptiles, that is, the four limbs in dinosaurs are held directly underneath the body and form a fully-erected posture like mammals. Some of them even can use their hindlimbs to support their body and become bipedal. In contrast, all other reptiles can only hold their four limbs splayed outwards at an angle to the sides of their body, thus sprawling along awkwardly.

It must be noted that some non-dinosaur archosaurs such as the *Rauisuchia* also independently developed the fully-erected posture. However, unlike dinosaurs and mammals, they developed a “pillar upright type” of posture through

inserting the femur into the downward-faced hip socket.

2. Classification of dinosaurs

How are dinosaurs classified? Knowing their classification can help us better understand them. However, before discussing their classification, we had better understand the classification of reptiles first.

On the lateral side of reptilian skulls, some openings (called temporal fenestrae) may or may not be seen in the temporal region behind the eye socket. Conventional classifications of reptiles are often based on the presence or absence, number, and position of these openings. Based on this criterion, reptiles are classified into four types.

1. Anapsida: without any temporal fenestra, this group includes ancient, truly primitive reptiles such as turtles.

2. Synapsida: with one lower temporal fenestra beneath the postorbital and squamosal bones, this group is represented by the mammal-like reptiles.

3. Euryapsida: with one upper temporal fenestra above the postorbital and squamosal bones, this group includes plesiosaurs etc. However, some paleontologists later consider that this group actually evolved from the diapsids by losing the lower temporal fenestra.

4. Diapsida: with two temporal fenestrae, one above and the other beneath the postorbital and squamosal bones, this group includes the majority of reptiles including dinosaurs.

In 1887, British paleontologist Harry Seeley divided dinosaurs into two major groups based on the structure of their pelvis, i.e., the Saurischia and the Ornithischia. This division is not what we commonly think of carnivorous vs. herbivorous dinosaurs, for all carnivorous dinosaurs are included in theropods of the Saurischia whereas the rest are all herbivorous dinosaurs.

The distinction between the Saurischia and the Ornithischia lies in the different configuration of their pelvic bones. In the lateral view, the saurischian pelvis is of triradiate type with the ilium above the downward and slightly forward pointing pubis and the backward extending ischium, much similar to what they are in lizards. In contrast, the pelvis in the Ornithischia is of

tetradiate type in the lateral view; the ilium expands both forward and backward; an anterior process of the pubis, or called prepubis, developed and projected forward beneath the ilium; the posterior portion of the pubis lay parallel to and closely beside the ischium, both extending backward and downward below the ilium.

In both the Saurischia and the Ornithischia, there is an opening in the bottom of the hip socket bordered by the ilium, ischium, and pubis, which is not seen in any other reptiles. The shared presence of this opening is considered as indicating the closest relationship between the Saurischia and the Ornithischia.

However, with more and more dinosaur fossils coming to light, the traditional classification seems to face considerable challenges. For instance, the configurations of pelvis in therizinosaurids and dromaeosaurids are neither triradiate nor tetradiate, and thus do not fall into either of the two major groups in the current classification schemes. Nevertheless, currently dinosaurs are still dichotomized based on these two types of pelvic configurations.

The Saurischia consists mainly of two groups: Theropoda and Sauropodomorpha. Most theropods are carnivorous and bipedal dinosaurs with sharp claws and jagged teeth, such as *Tyrannosaurus* and *Allosaurus*, which we are most familiar with. Therizinosaurids and dromaeosaurids as well as birds are also included in the Theropoda. Fossil evidence has shown that some small theropods have a very close relationship with birds. In contrast, the Sauropodomorpha is a kind of large and quadrupedal herbivorous dinosaurs, including the Prosauropoda such as *Lufengosaurus* and the Sauropoda such as *Mamenchisaurus* and *Diplodocus*. They all have long necks, sturdy limbs, and huge bodies.

The Ornithischia is divided into two evolutionary lineages: Thyreophora and Neornithischia. The Thyreophora includes the Stegosauria such as *Stegosaurus* and the Ankylosauria such as *Ankylosaurus*. The Neornithischia contains the Ceratopsia such as *Triceratops*, the Pachycephalosauria such as *Pachycephalosaurus*, and the Ornithopoda such as *Edmontosaurus* (Family Hadrosauridae). All of them are herbivorous dinosaurs.

3. Skeleton of dinosaurs

To better understand dinosaurs, we must have a clear understanding of its skeletal anatomy, which is an important approach to understanding their characteristics.

Among the skeletal elements in dinosaurs, skull is the most important element that can provide the researchers with crucial information. A complete dinosaur skull consists of a cranium and the left and right mandibles. Besides the nostrils and orbits, there are many other openings in the dinosaur skull, including antorbital fenestrae, temporal fenestrae, and external mandibular fenestrae, all of which serve to reduce the weight of the skull and provide muscle attachments. The sutural contacts between the skull bones are called sutures. The regional description of the skull goes as follows: “anterior” is referred to the snout region, “posterior” the occipital region, “dorsal” the top of the skull, and “ventral” the palatal region.

In describing dinosaurs, besides skull, we often mention cervical vertebrae, dorsal vertebrae, sacral vertebrae, and caudal vertebrae, which constitute the vertebrate column. In addition, there are pectoral girdle, forelimbs, pelvic girdle, and highlimbs, together also known as appendicular skeleton.

The description of these skeletal elements enables us to learn morphology and characteristics of dinosaurs. In addition to knowing the names of these bones, we also need to know some orientation terms in describing them. These terms are based on an imaginary posture with a horizontal axial skeleton and vertical four limbs. As such, “anterior” means toward the cranial direction, “posterior” toward the caudal, “dorsal” toward the top, and “ventral” toward the bottom. In describing the limb bones, we use “proximal” to mean that the end of the bone is near the body, and “distal” to mean that the end of the bone is away from the body.

4. Evolution and distribution of dinosaurs

Dinosaurs emerged in the fossil record around 230 million years before present, and non-avian dinosaurs

disappeared approximately 65 million years ago. They ruled the land for 165 million years, and the era in which dinosaurs lived is called the Mesozoic Era, which consists of the Triassic, Jurassic, and Cretaceous periods.

Dinosaurs first came in the scene during the Middle Triassic when all the continents on earth were united, known as the Pangaea. The Pangaea was so vast that the warm and moist air from the ocean could not be carried into its central areas, where a huge desert was formed, hot and dry. Nevertheless, most regions on the Pangaea were under mild climate.

Under this mild climate, various groups of animals gradually recovered from the end-Permian mass extinction. Thecodonts such as *Postosuchus*, *Arizonasaurus* and *Desmotosuchus* as well as mammal-like reptiles such as *Placerias* began to become dominant on earth. Although dinosaurs emerged at this time, they just got started and seemed to be feeble and unimpressive.

Another great extinction event occurred toward the end of the Triassic, with the majority of terrestrial species becoming extinct including most thecodonts and plants. Nearly half of the marine species also became extinct. However, the few feeble dinosaurs survived the extinction event. They suddenly flourished and diversified in the Jurassic, and seemed to become dominant at once.

It was dinosaurs' golden age from the Late Jurassic to Early Cretaceous. They spread to all continents, and almost had no viable competitors except for the internal fighting between the herbivorous and carnivorous dinosaurs. They showed their unmatched vigor and became the most abundant, diverse, and important inhabitants on earth.

To date, scientists have found dinosaur fossils throughout the world's continents, including the Antarctic and Arctic regions. Therefore, we may safely infer that dinosaurs were the dominant species on earth during the Mesozoic era.

5. Dinosaur researches in China

China now boasts the largest number of dinosaur discoveries, and the Chinese paleontologists have made very important contributions to dinosaur excavations and

researches.

The large-scaled dinosaur excavations can be dated back to April 21st, 1922, when the American Museum of Natural History's Central Asia Expeditions kicked off. Headed by American zoologist Roy Chapman Andrews, the expedition team consisted of over 40 members, equipped with 5 four-wheel drive vehicles and 75 camels. They departed from Zhangjiakou, Hebei Province, and headed to the Gobi Desert. In Erenhot, Inner Mongolia, they made two excavations and found *Bactrosaurus johnsoni* Gilmore, 1933, and *Archaeornithomimus asiaticus* (Gilmore, 1933), Russell, 1977 as well as some dinosaur eggs. This marked the beginning of great dinosaur discoveries in China.

Ever since then, numerous dinosaur expeditions have taken place in China, including the Sino-US Dinosaur Expedition (1985), Sino-Canadian Dinosaur Project (1986-1990), China-Japan Silk Road Dinosaur Expedition (1992-1993), China-Mongolia-Japan Mongolian Highland Dinosaur Project (1995-1999), and China-Belgium Inner Mongolia Dinosaur Expedition (1995-2000) etc. These high-profile dinosaur expeditions led to many great dinosaur discoveries and made China a very important place for dinosaur hunting. Especially during this period, a great number of well-preserved feathered dinosaurs were excavated from Liaoning, Northeast China, which has attracted great attention from the dinosaur experts all over the world.

To date, China has become a country with the largest number of known dinosaur species. According to the 2009 statistics, more than 150 species of dinosaur fossils have been found in China, ranked number one in the world.

蜥臀目

蜥臀目 (Saurischia) 是恐龙总目所属两目中的一目，另外一目为鸟臀目 (Ornithischia)，两者的区分标准在于它们不同的腰带结构。

蜥臀目的名字来源于希腊文中的 σαυρο (意为“蜥蜴”) 与 ισχίον (意为“髋关节”)。

从目前发现的证据来看，蜥臀目的出现时间可能比鸟臀目要早，大约在中三叠世就已经出现。而且，它们并没有在白垩纪末期的灭绝事件中全部灭亡，它们中的一支大约在侏罗纪时演化为鸟类的祖先，然后成功地在灭绝事件中生存下来，成为现代鸟类。

蜥臀目包括两个亚目：兽脚亚目 (Theropoda) 和蜥脚形亚目 (Sauropodomorpha)。其中，兽脚亚目囊括了所有的肉食性恐龙，而蜥脚形亚目则是一类体型庞大的植食性恐龙类群。

Saurischia

The Saurischia is one of the two orders within the Dinosauria, the other order being the Ornithischia. The main distinction between the two orders lies in their different pelvic structures.

The name of Saurischia is derived from the Greek words σαυρο (i.e., lizard) and ισχιον (i.e., hip joint). The current fossil evidence indicates that the Saurischia occurred around the Middle Triassic, earlier than the Ornithischia did in the fossil record. The Saurischia did not become completely extinct, and one of its lineages gave rise to the ancestral birds in the Jurassic, which survived the end-Cretaceous mass extinction and evolved into modern birds.

The Saurischia includes some of the most primitive genera and species as well as two suborders, i.e., Theropoda and Sauropodomorpha. The Theropoda contains all the carnivorous dinosaurs whereas the Sauropodomorpha is a group of large to gigantic sized herbivorous dinosaurs.

兽脚亚目

兽脚亚目 (Theropoda) 隶属蜥臀目，是一群以双足行走的恐龙，其中很多物种的皮肤上覆盖有毛发。兽脚亚目囊括了所有的肉食性恐龙，但并非所有的兽脚亚目恐龙都是肉食性恐龙。近几年来，科学家发现很多兽脚亚目成员，比如镰刀龙超科 (Therizinosauroidea)、似鸟龙下目 (Ornithomimosauria) 等是杂食性，甚至是植食性的。

兽脚亚目恐龙是一类非常特殊的类群，因为它其中的一支虚骨龙类 (Coelurosauria) 目前被认为是现代鸟类的祖先。它们和鸟类共同拥有长有三趾的脚掌、中空的骨头、披覆羽毛等特征。也就是说，它们是唯一没有在白垩纪的大灭绝事件中消失的恐龙类群，它们演化成鸟类一直生活到今天。

兽脚亚目的出现时间非常早，从目前已发现的证据看，它们大约在 2.3 亿年前的中三叠世就已经出现。腔骨龙超科 (Coelophysoidea) 是目前发现的较为原始的兽脚亚目类群，它们是一群身体修长的肉食性恐龙，体型一般在 1~6m，其中一些头顶带有易碎的冠饰。它们在当时极为常见，可能遍布世界的每一个角落。

兽脚亚目还包含有较为先进的角鼻龙下目 (Ceratosauria) 和坚尾龙类 (Tetanurae)。

角鼻龙下目最早可能起源于联合古陆 (盘古大陆) 中部，生存年代从早侏罗世一直延续到晚白垩世的大灭绝，前后长达 1.3 亿年之久。角鼻龙下目几乎是全球性分布，只有南极洲没有发现该家族成员的化石。至白垩纪时，角鼻龙下目，特别是阿贝力龙科 (Abelisauridae) 集中分布于南方冈瓦那大陆，包括现在的南美洲、非洲、马达加斯加及印度，是南方大陆的顶级掠食者。

角鼻龙下目成员大部分的体型中等，体长均

为 4~7m，不过也有体型巨大的成员，如食肉牛龙 (*Carnotaurus*)。个体成员之间的体态有较大差异。

坚尾龙类是在兽脚亚目之中，亲近于现代鸟类，而离角鼻龙较远的所有物种，它首次出现于侏罗纪早期或中期。和角鼻龙类相比，坚尾龙类的头颅骨不结实，骨头中空，手指不超过 3 指，大多身体上覆盖有毛发。

坚尾龙类中的一支——虚骨龙类，是演化最为多样的一支，包括体型和力量都占据优势的暴龙超科 (Tyrannosauroidea)、食性特化的镰刀龙超科，以及演化出会飞行的恐龙的恐爪龙下目 (Deinonychosauria) 等。

多样化的虚骨龙类持续存活到中生代末期，大部分都在灭绝事件中消失了，现代鸟类是坚尾龙类演化支里唯一存活的代表。

Theropoda

The Theropoda belongs to the Saurischia and is a group of bipedal dinosaurs, many of which were covered with hair-like structures or protofeathers. It includes all carnivorous dinosaurs, but not all theropods are carnivorous. In recent years, scientists have found some theropods that are omnivorous or even herbivorous, such as the Therizinosauroidea and Ornithomimosauria.

The Theropoda is a very special group because one of its branches, i.e., Coelurosauria, is believed to have given rise to modern birds. The Coelurosauria and birds share such characteristics as tridactyle foot, hollowed bone, and feather. In other words, coelurosaurs are the only dinosaur group that managed to survive the end-Cretaceous mass extinction by having evolved into birds, which are still with us today.

The Theropoda appeared very early in the fossil record among dinosaurs, and the current evidence shows that it first appeared in the Middle Triassic (about 230 million years ago). Coelophysoidea is one of the more primitive theropod groups so far known; it is carnivorous and with a slender body between one to six meters long, and some with delicate cranial crests. Coelophysoids were very common and might have a cosmopolitan distribution.

The Theropoda also includes more advanced Ceratosauria and Tetanurae.

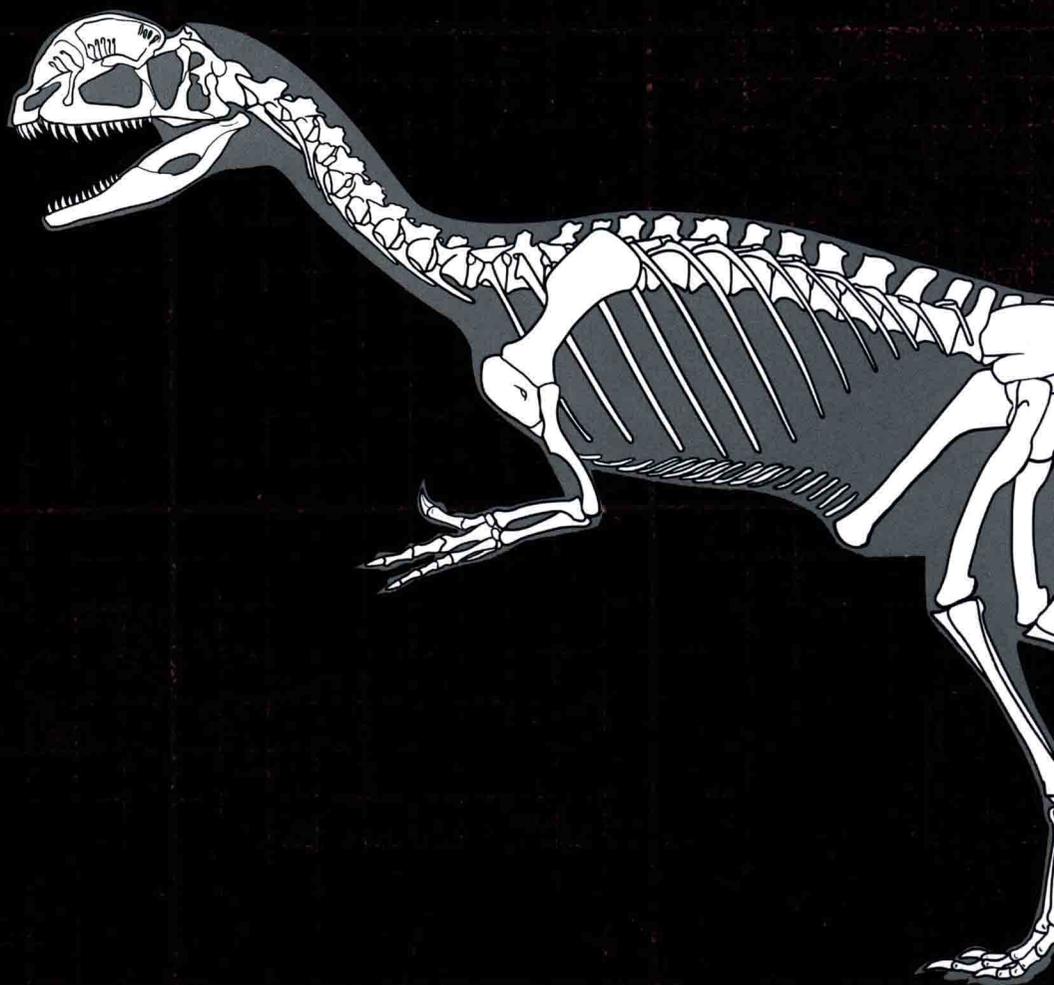
The Ceratosauria initially may have originated in the central Pangaea, and lived from the Early Jurassic till the end-Cretaceous mass extinction, spanning 130 million years. The Ceratosauria is distributed almost all over the world, except for the Antarctica where no

ceratosaurian fossils have been found so far. In the Cretaceous, the Ceratosauria, especially Abelisauridae, was concentrated on the Gondwanaland, including the present day South America, Africa, Madagascar, and India. The ceratosaurians were top predators on the southern continents. They were mostly medium-sized dinosaurs between four to seven meters long. However, there were also giant members such as Carnotaurus. There are great variations in body size among the different individuals.

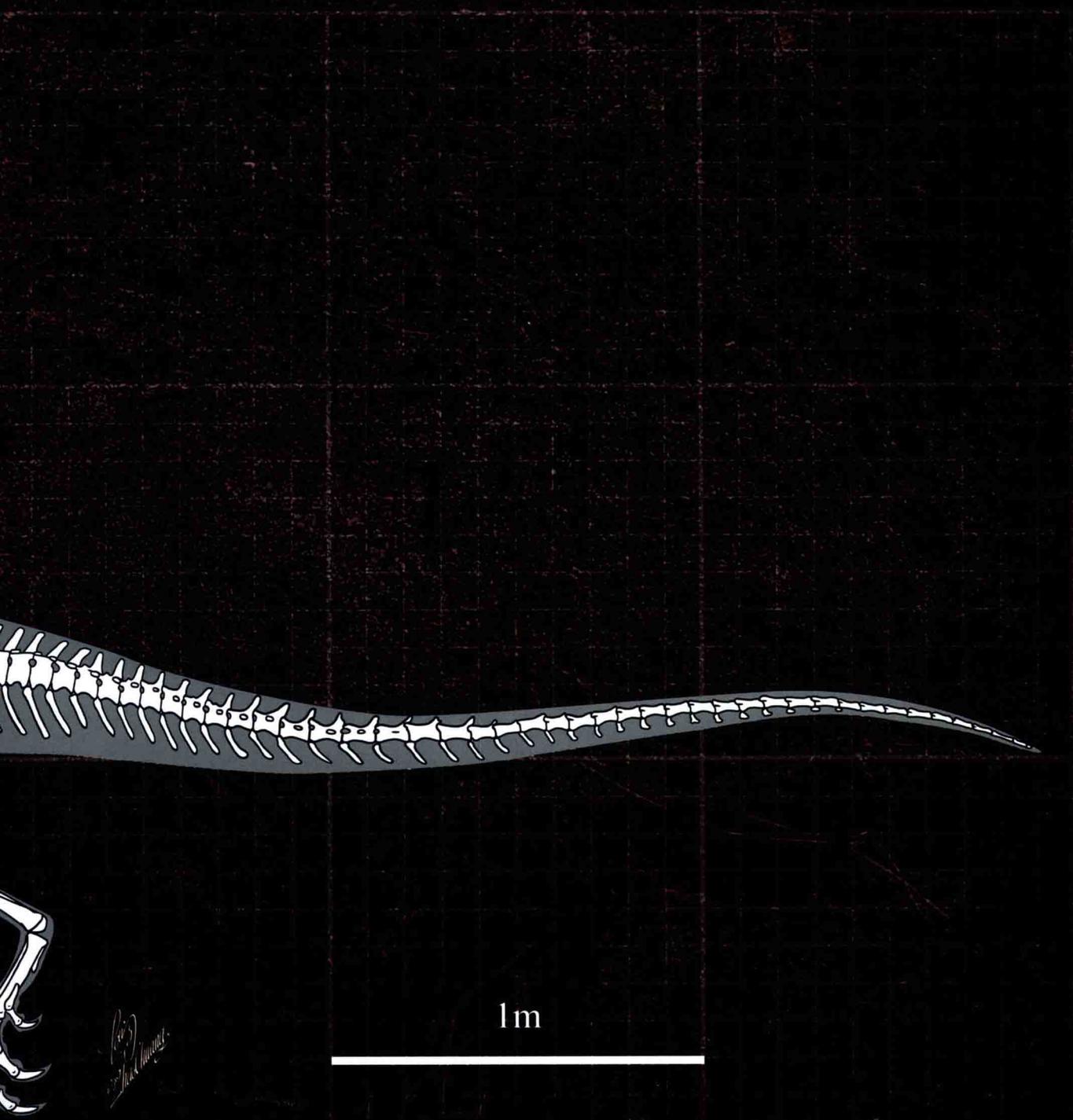
Among the theropods, the Tetanurae is close to modern birds but more distantly related to the ceratosaurians. They first appeared in the Early or Middle Jurassic. Compared to the ceratosaurians, the Tetanurae has a less strong skull, hollowed bone, no more than three fingers, and most of its members were covered with hair-like feathers on body.

The Coelurosauria is a branch of the Tetanurae and the most diversified branch, which includes the powerful and awesome Tyrannosauroidea, the Therizinosauroidea with specialized feeding habits, and Deinonychosauria that gave rise to the flying dinosaurs.

Sinosaurus triassicus Young, 1948



蜥臀目 Saurischia
兽脚亚目 Theropoda
腔骨龙超科 Coelophysoidea





Sinosaurus triassicus Young, 1948



中文名称：三叠中国龙

学名：*Sinosaurus triassicus* Young, 1948

释义：属名意为“中国的蜥蜴”。

种名指化石发现时所判断的地层。

大小：体长 4~5m

食性：肉食

生存年代：早侏罗世，距今约 1.9 亿年

化石产地：中国云南

命名者：杨钟健

Taxonomic Name: *Sinosaurus triassicus* Young, 1948

Etymology: The generic name means "China lizard".

The specific name refers to Triassic.

Body Size: around 4 to 5 meters long

Diet: Carnivore

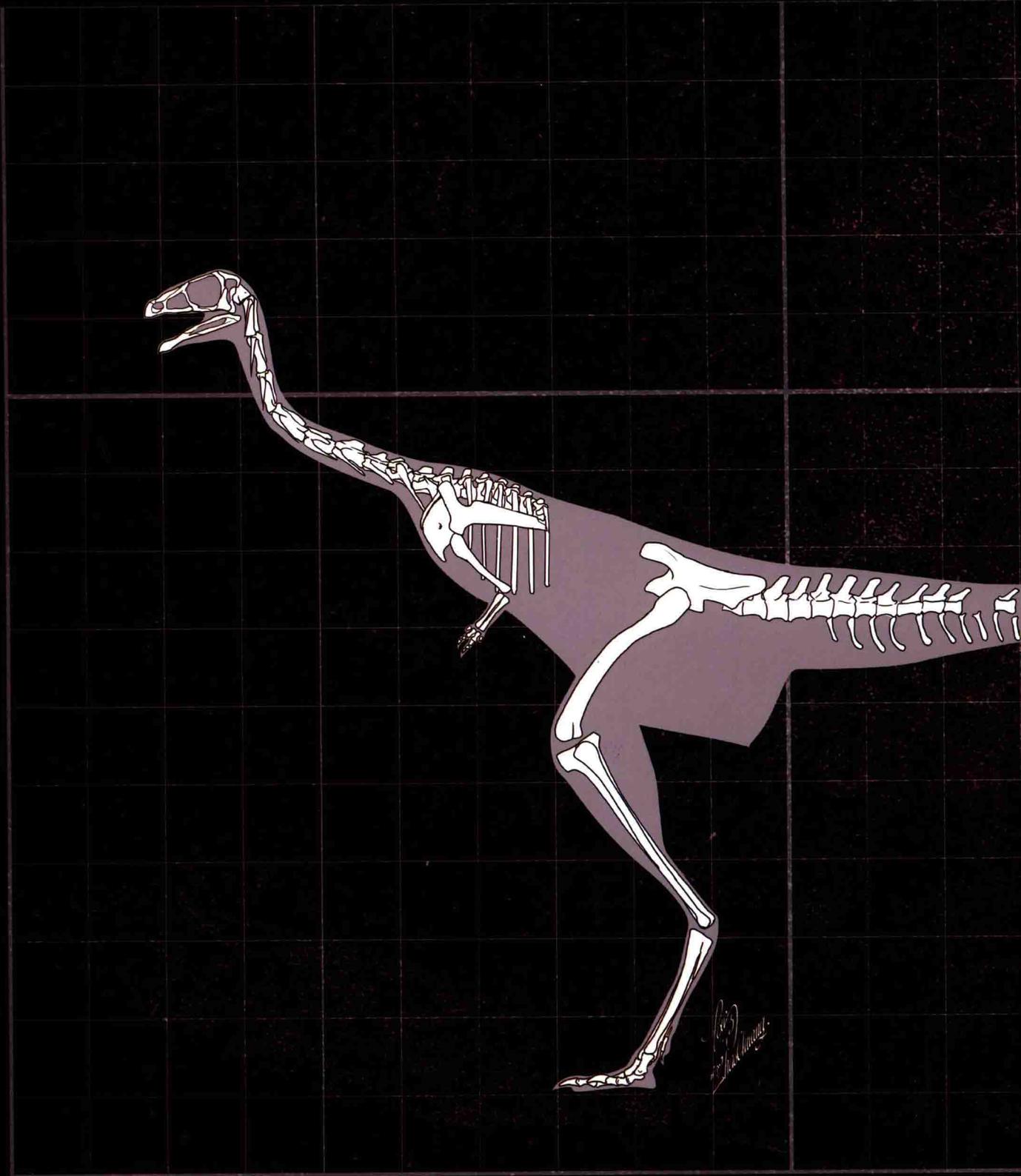
Age: the Early Jurassic, approximately 190 million years ago

Locality: Yunnan, China

First Described by: Zhongjian Yang

Young
1948

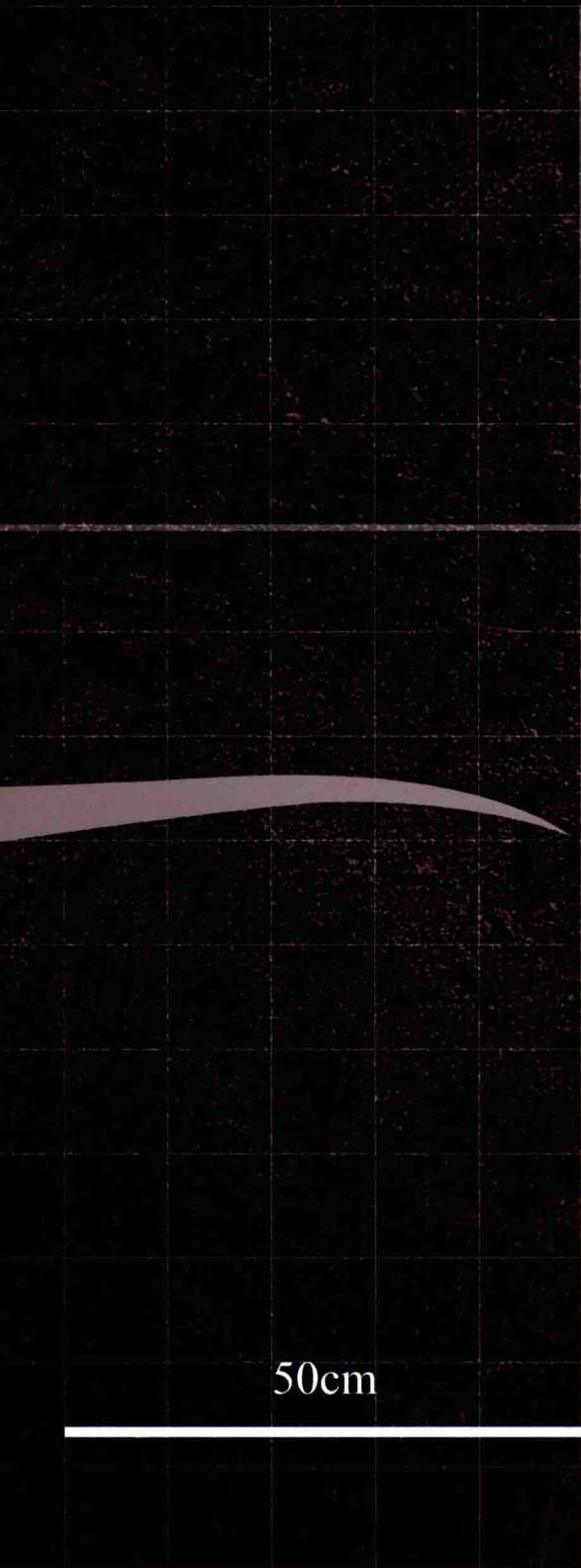
Limusaurus inextricabilis Xu et al., 2009



蜥臀目 Saurischia

兽脚亚目 Theropoda

角鼻龙下目 Ceratosauria





Chris
Blackmore

Limusaurus inextricabilis Xu et al., 2009

中文名称: 难逃泥潭龙

学名: *Limusaurus inextricabilis* Xu et al., 2009

释义: 属名意为“陷入泥潭的蜥蜴”。

种名意为“不可能逃脱的”。

大小: 体长约 1.7m, 高约 1m, 体重约 50kg

食性: 植食

生存年代: 晚侏罗世, 距今 1.59 亿年 ~1.54 亿年

化石产地: 新疆, 中国

命名者: 徐星, James M. Clark, Jonah Choiniere 等

Taxonomic Name: *Limusaurus inextricabilis* Xu et al., 2009

Etymology: The generic name means "mud lizard".

The specific name means "impossible to extricate".

Body Size: around 1.7 meters long, 1 meter high, with an estimated weight of 50 kg

Diet: Herbivore

Age: the Late Jurassic, approximately 159 to 154 million years ago

Locality: Xinjiang, China

First Described by: Xing Xu, James M. Clark, Jonah Choiniere etc



Monolophosaurus jiangji Zhao et Currie, 1993

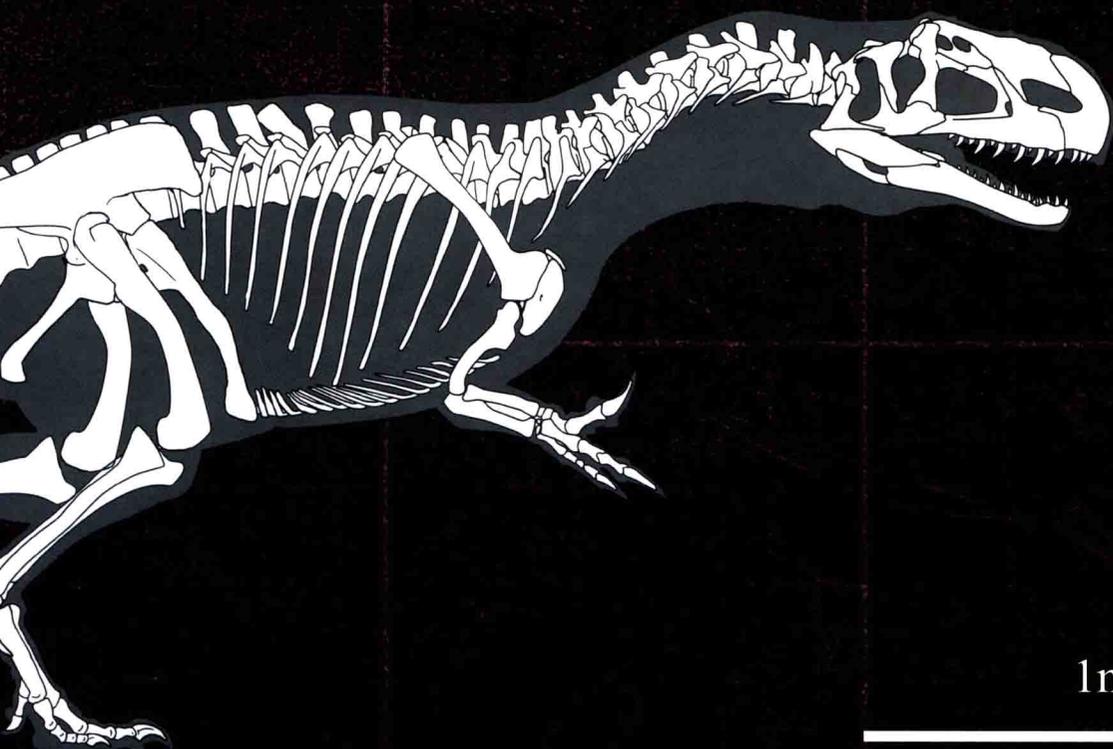
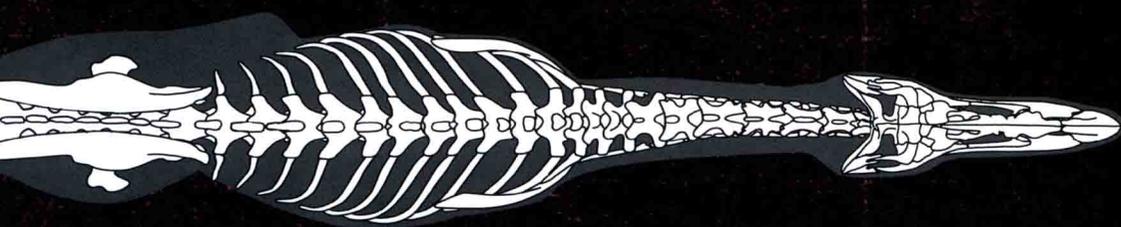


Currie
1993

蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae



Monolophosaurus jiangji Zhao et Currie, 1993



中文名称：将军庙单嵴龙

学名：*Monolophosaurus jiangji* Zhao et Currie, 1993

释义：属名意为“长有一个脊状凸起的蜥蜴”。

种名来自于化石发现地附近的将军庙。

大小：体长约 5m, 高约 1.7m, 体重约 700kg

食性：肉食

生存年代：中侏罗世，距今 1.7 亿年

化石产地：中国新疆

命名者：赵喜进, Philip J. Currie



Philip J. Currie
© 1993

Taxonomic Name: *Monolophosaurus jiangji* Zhao et Currie, 1993

Etymology: The generic name means "single-crested lizard".

The specific name refers to Jiangjun Temple, which near the fossil site.

Body Size: around 5 meters long, 1.7 meters high, with an estimated weight of 700 kg

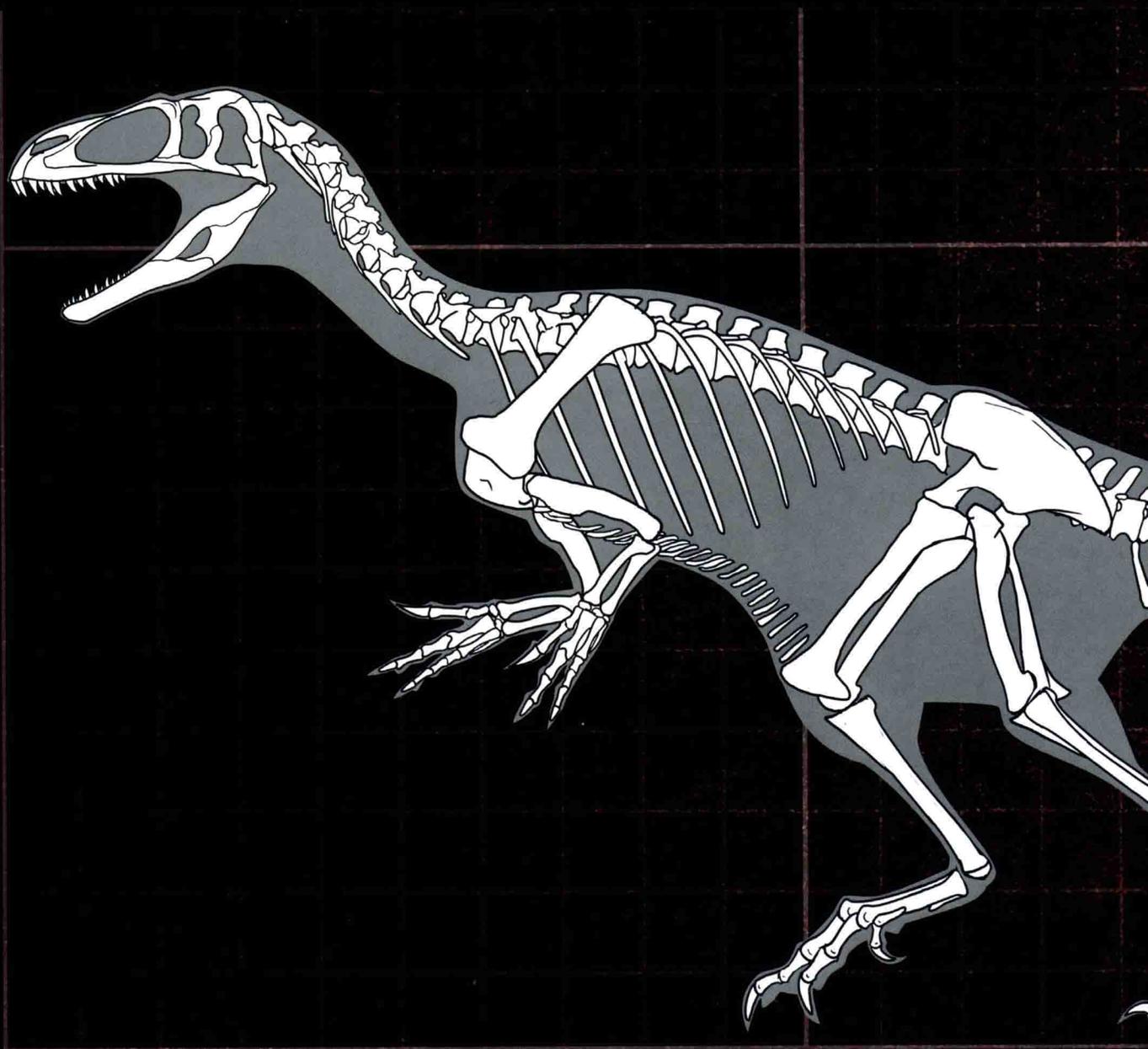
Diet: Carnivore

Age: the Middle Jurassic, approximately 170 million years ago

Locality: Xinjiang, China

First Described by: Xijin Zhao, Philip J. Currie

Shidaisaurus jinae Wu et al., 2009



中文名称：金时代龙

学名：*Shidaisaurus jinae* Wu et al., 2009

释义：属名意为“时代的蜥蜴”。

种名来自汉语拼音中的“金”。金时代龙的属名和种名要连在一起理解，“金时代”是指化石发现处附近的禄丰世界恐龙谷的所有方——金时代投资控股集团。

大小：体长约 3m

食性：肉食

生存年代：晚侏罗世，距今约 1.6 亿年

化石产地：中国云南

命名者：吴肖春，Philip J. Currie，董枝明等

蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae



Taxonomic name: *Shidaisaurus jinae* Wu et al., 2009

Etymology: The generic name means "Age lizard".

The specific name means "gold". The generic name and specific name in combination means "Golden Age lizard", in reference to the Jin-Shidai ("Golden Age") Company that exploits the Jurassic World Park near the fossils discovered site.

Body Size: around 3 meters long

Diet: Carnivore

Age: the Late Jurassic, approximately 160 million years ago

Locality: Yunnan, China

First Described by: Xiaochun Wu, Philip J. Currie, Zhiming Dong etc

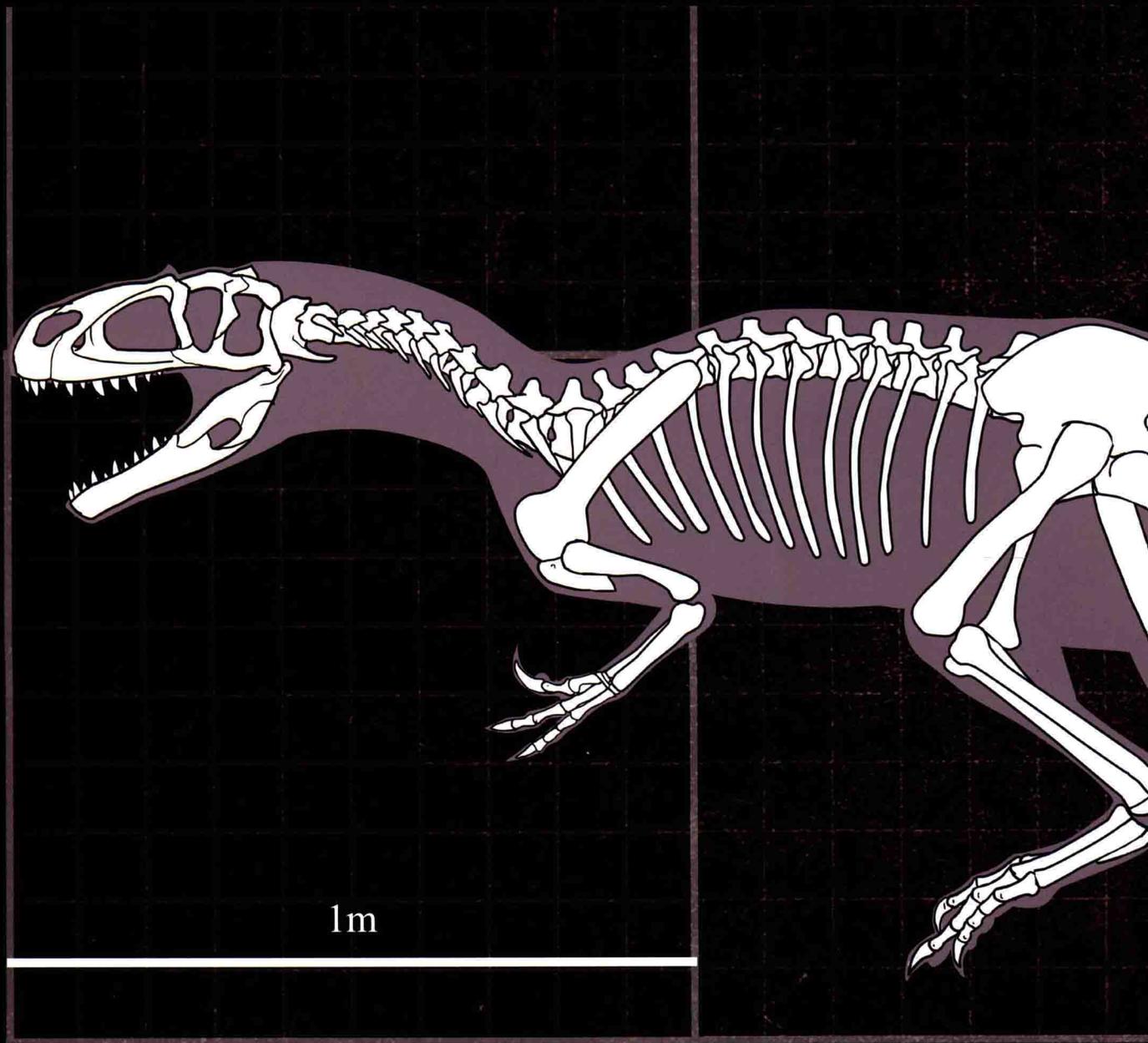


Shidaisaurus jinae Wu et al., 2009



© 2009
Wu et al.

Gasosaurus constructus Dong et Tang, 1985



中文名称：建设气龙

学名：*Gasosaurus constructus* Dong et Tang, 1985

释义：属名意为“天然气的蜥蜴”，献给发现化石的中国石油与天然气公司。
种名指建设停车场。

大小：体长约 3.5m

食性：肉食

生存年代：中侏罗世，距今约 1.64 亿年

化石产地：中国四川

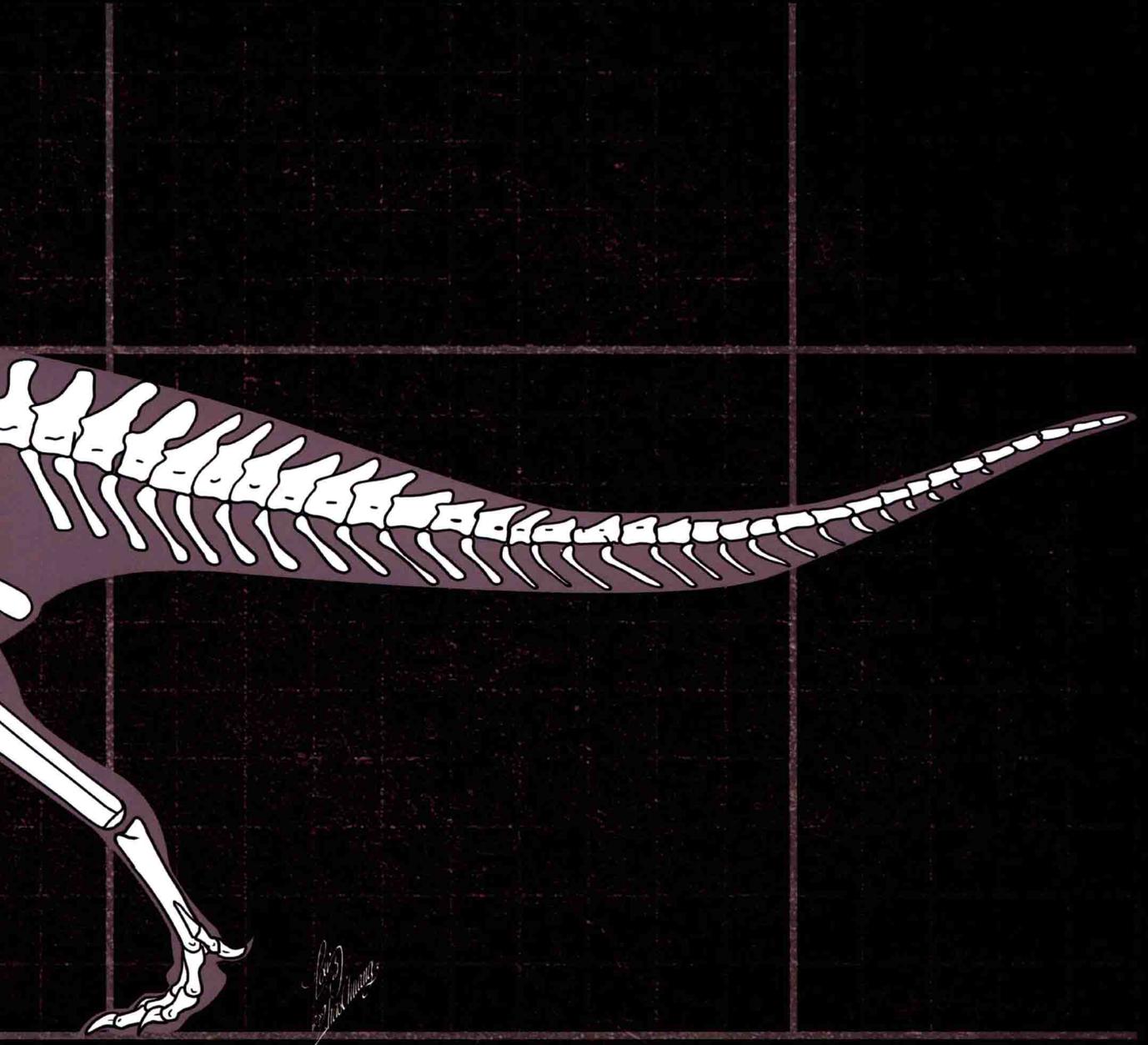
命名者：董枝明，唐治路

蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

肉食龙下目 Carnosauria



Taxonomic Name: *Gasosaurus constructus* Dong et Tang, 1985

Etymology: The generic name means "gas lizard".

The specific name means "the construction of parking lot".

Body Size: around 3.5 meters long

Diet: Carnivore

Age: the Middle Jurassic, approximately 164 million years ago

Locality: Sichuan, China

First Described by: Zhiming Dong , Zhilu Tang



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The Artist's Name



Gasosaurus constructus Dong et Tang, 1985

Kelmayisaurus petrolicus Dong, 1973

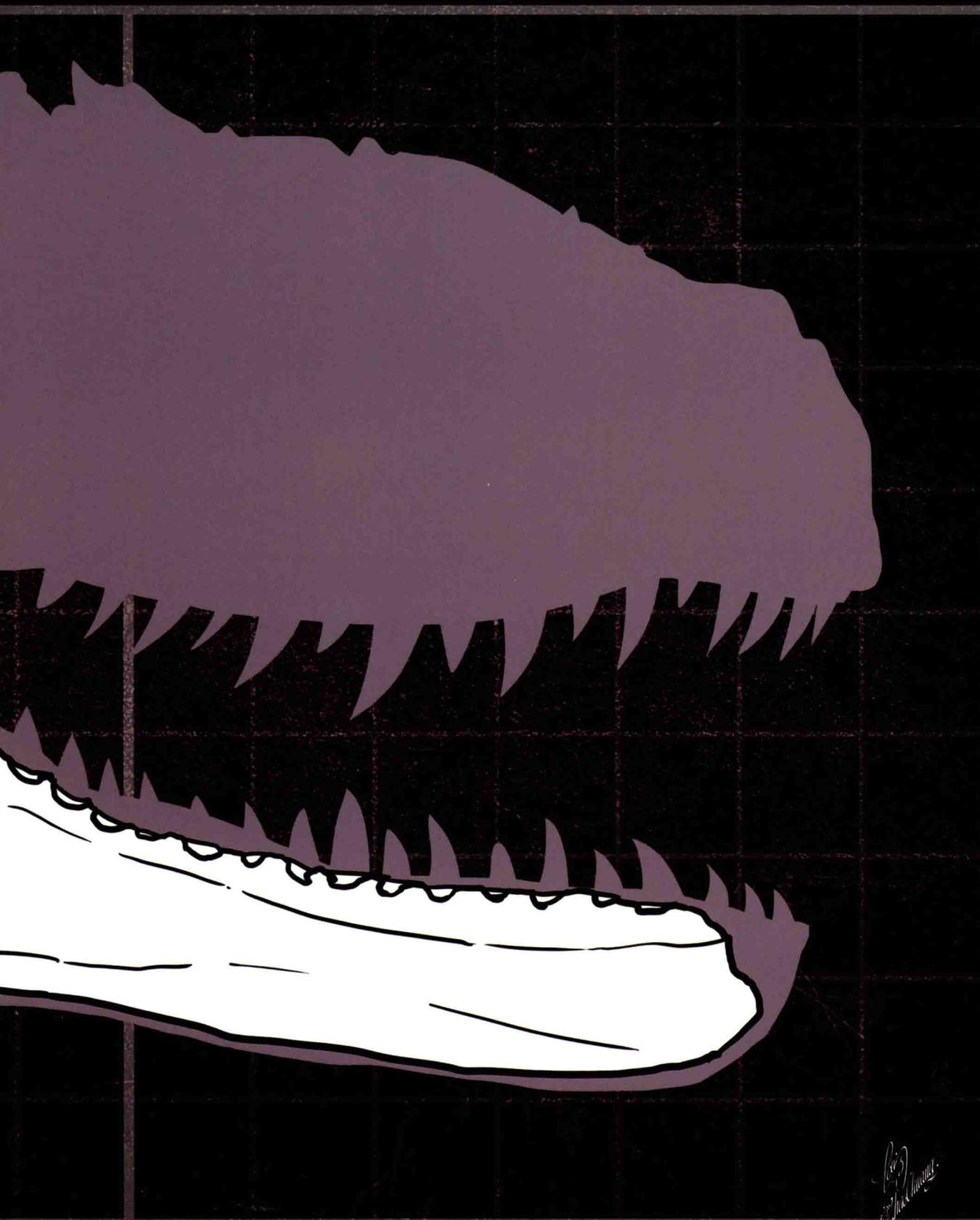


蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

肉食龙下目 Carnosauria



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Kelmaysaurus petrolicus Dong, 1973



中文名称：石油克拉玛依龙

学名：*Kelmaysaurus petrolicus* Dong, 1973

释义：属名意为“克拉玛依的蜥蜴”。

种名指化石产地克拉玛依是著名的石油产地。

大小：体长约 6m

食性：肉食

生存年代：早白垩世，距今约 1.4 亿年 ~1 亿年

化石产地：中国新疆

命名者：董枝明

Taxonomic Name: *Kelmaysaurus petrolicus* Dong, 1973

Etymology: The generic name means "Kelmayi lizard".

The specific name refers to the city of Kelmayi, which is a well-known oil-producing place.

Body Size: around 6 meters long

Diet: Carnivore

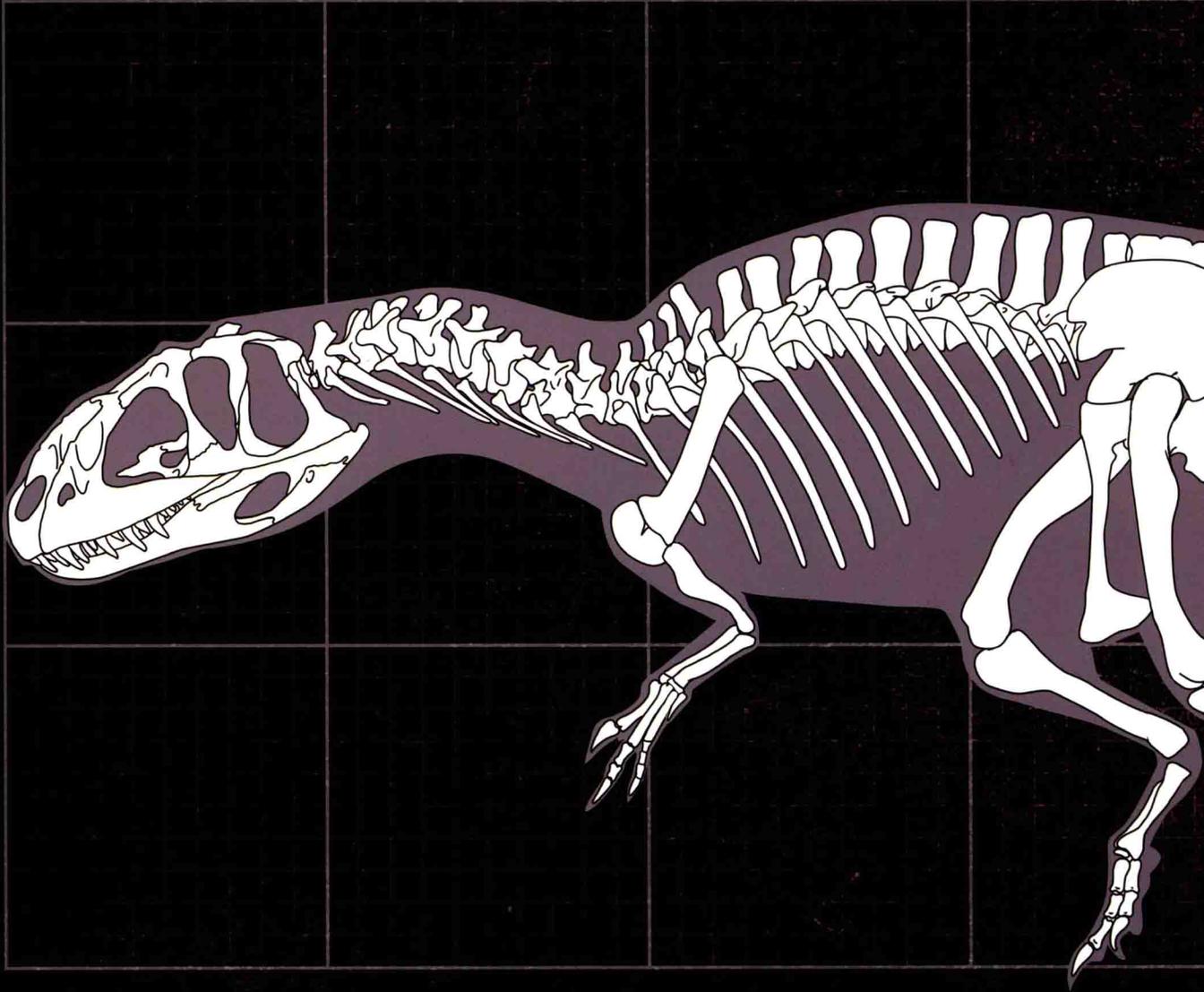
Age: the Early Cretaceous, approximately 140 to 100 million years ago

Locality: Xinjiang, China

First Described by: Zhiming Dong



Yangchuanosaurus shangyouensis Dong et al., 1978

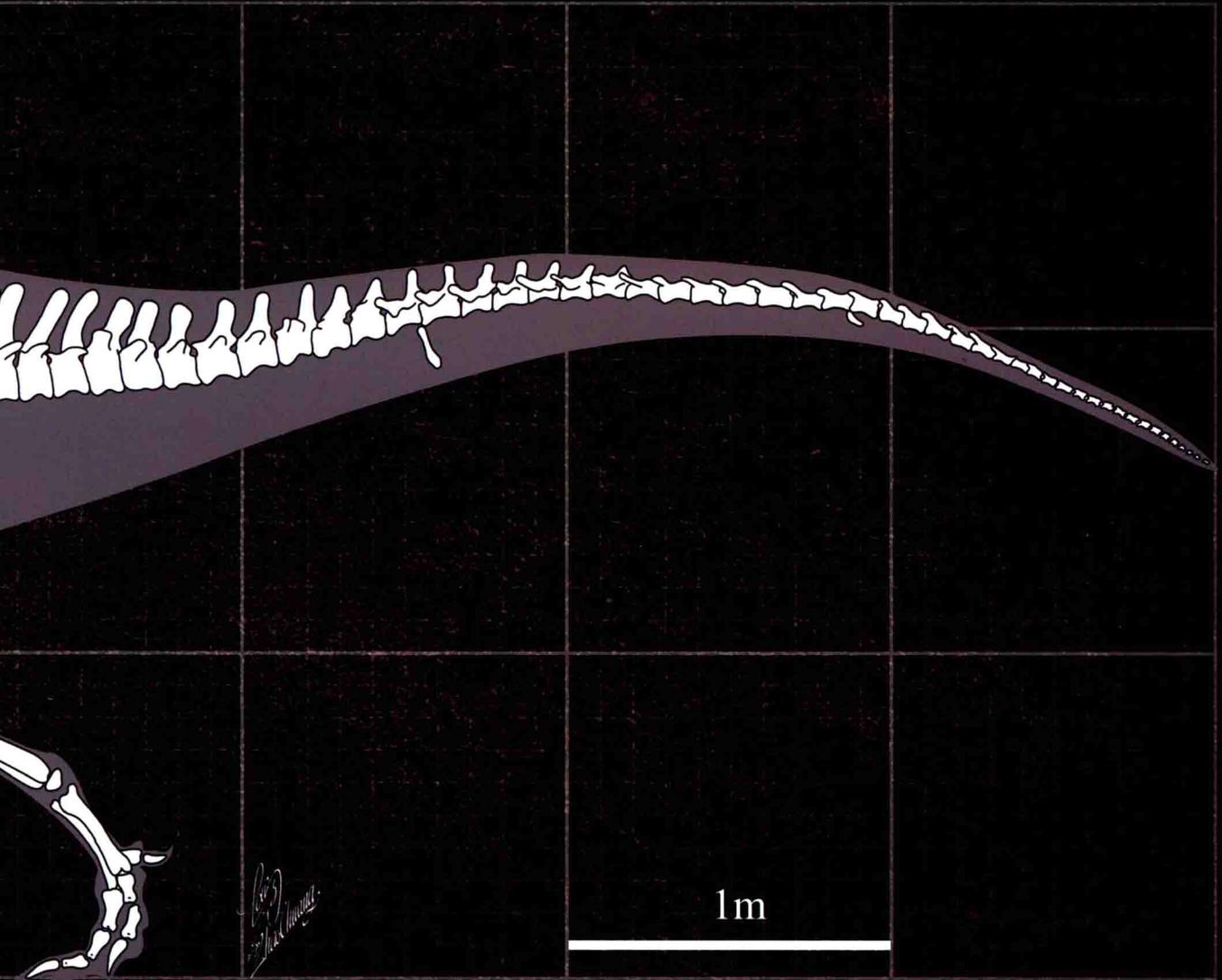


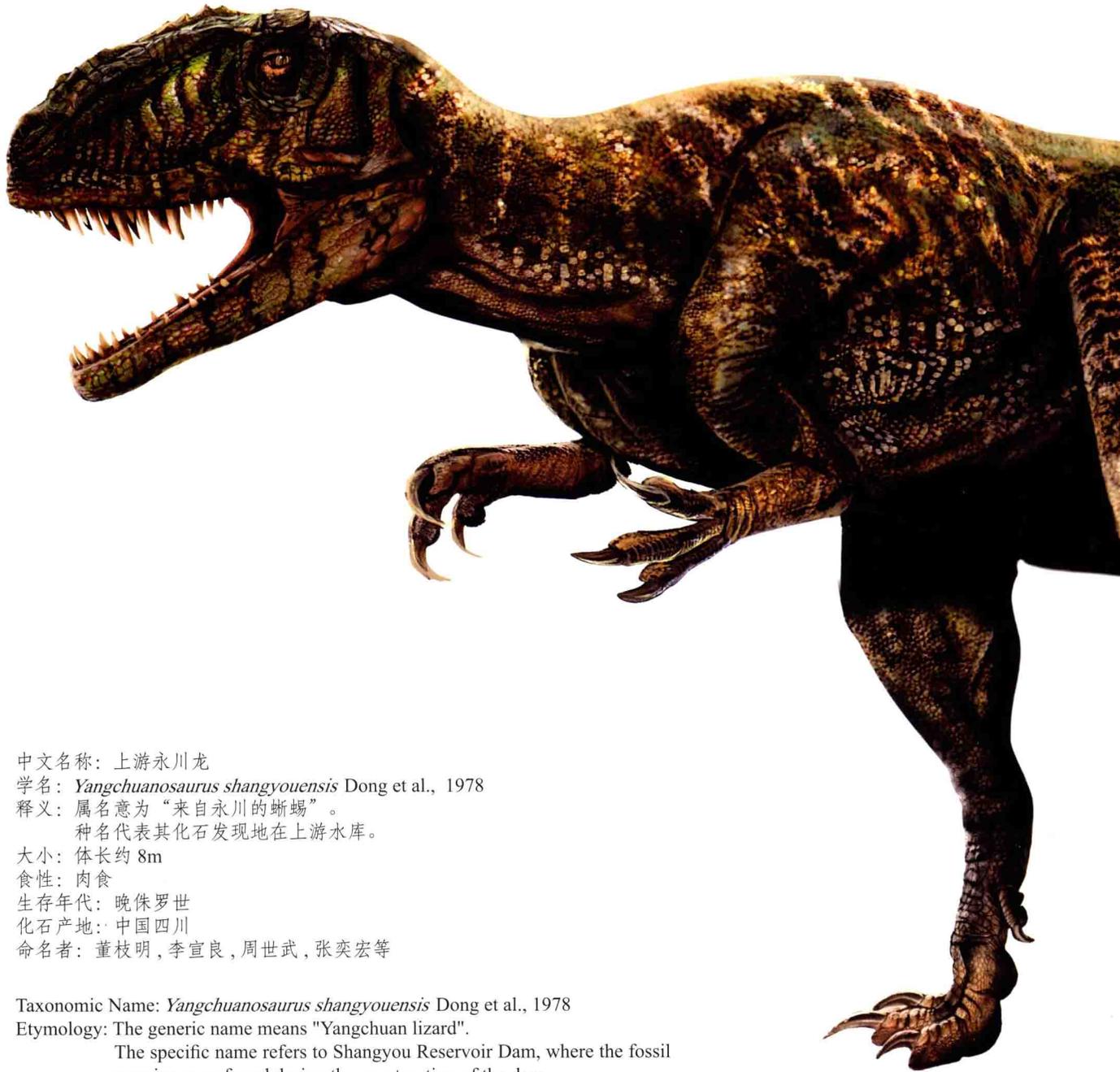
蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

肉食龙下目 Carnosauria





中文名称：上游永川龙

学名：*Yangchuanosaurus shangyouensis* Dong et al., 1978

释义：属名意为“来自永川的蜥蜴”。

种名代表其化石发现地在上游水库。

大小：体长约 8m

食性：肉食

生存年代：晚侏罗世

化石产地：中国四川

命名者：董枝明, 李宣良, 周世武, 张奕宏等

Taxonomic Name: *Yangchuanosaurus shangyouensis* Dong et al., 1978

Etymology: The generic name means "Yangchuan lizard".

The specific name refers to Shangyou Reservoir Dam, where the fossil remains were found during the construction of the dam.

Body Size: around 8 meters long

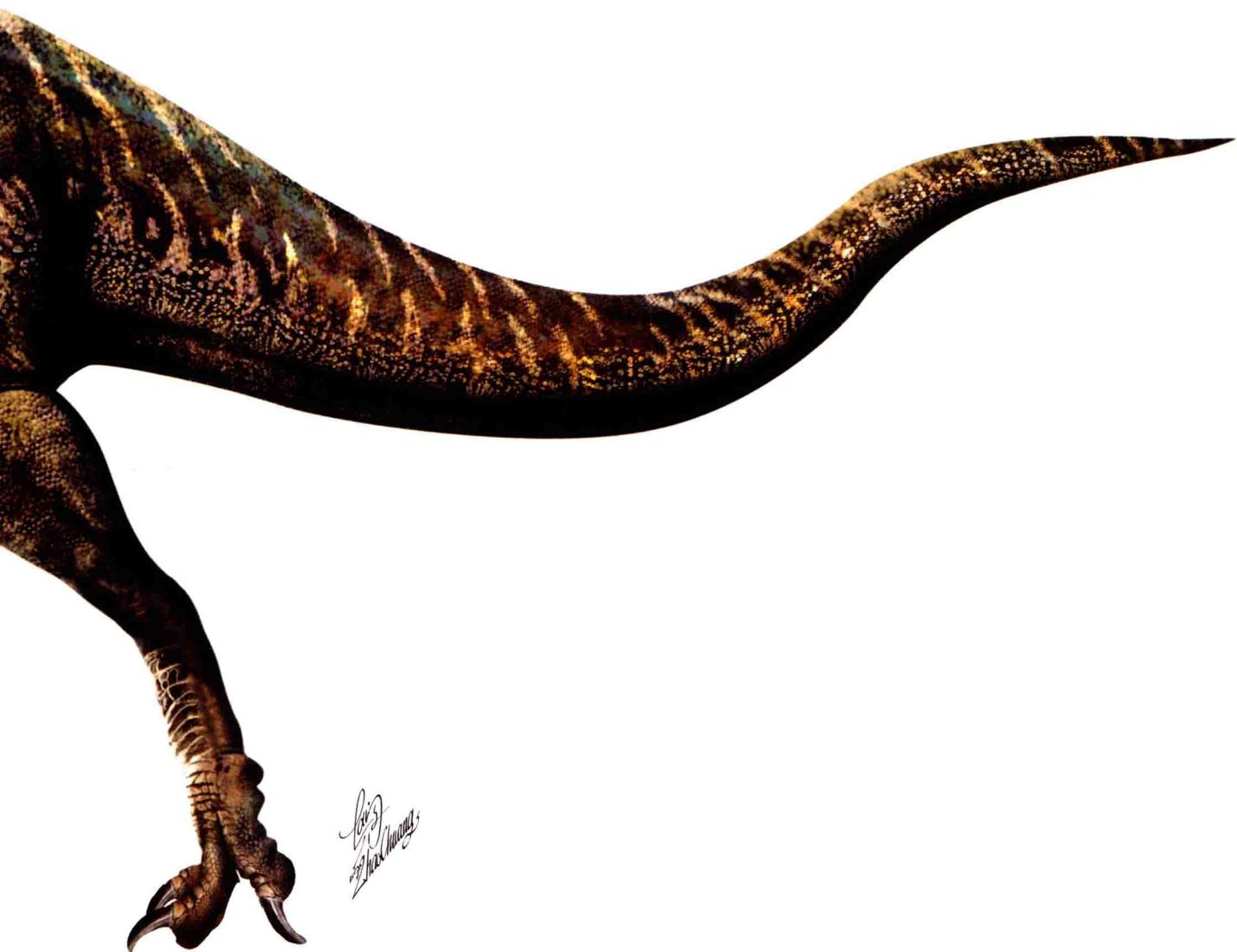
Diet: Carnivore

Age: the Late Jurassic

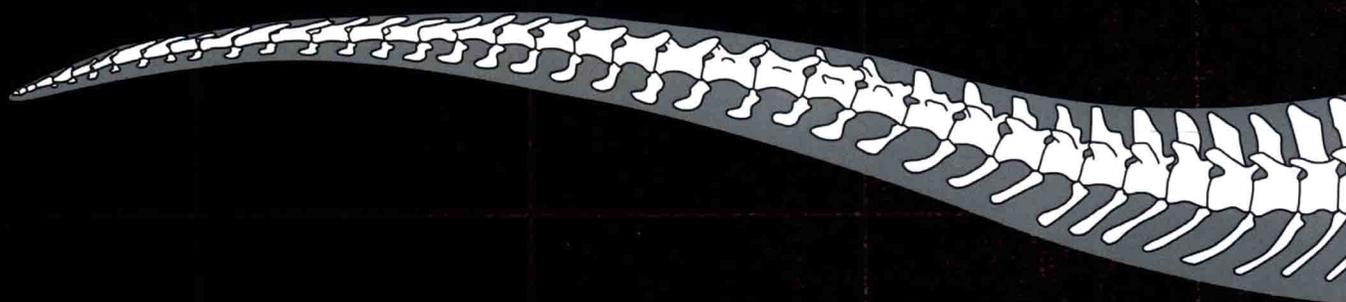
Locality: Sichuan, China

First Described by: Zhiming Dong, Xuanliang Li, Shiwu Zhou, Yihong Zhang etc

Yangchuanosaurus shangyouensis Dong et al., 1978



Szechuanosaurus campi Young, 1942



1m



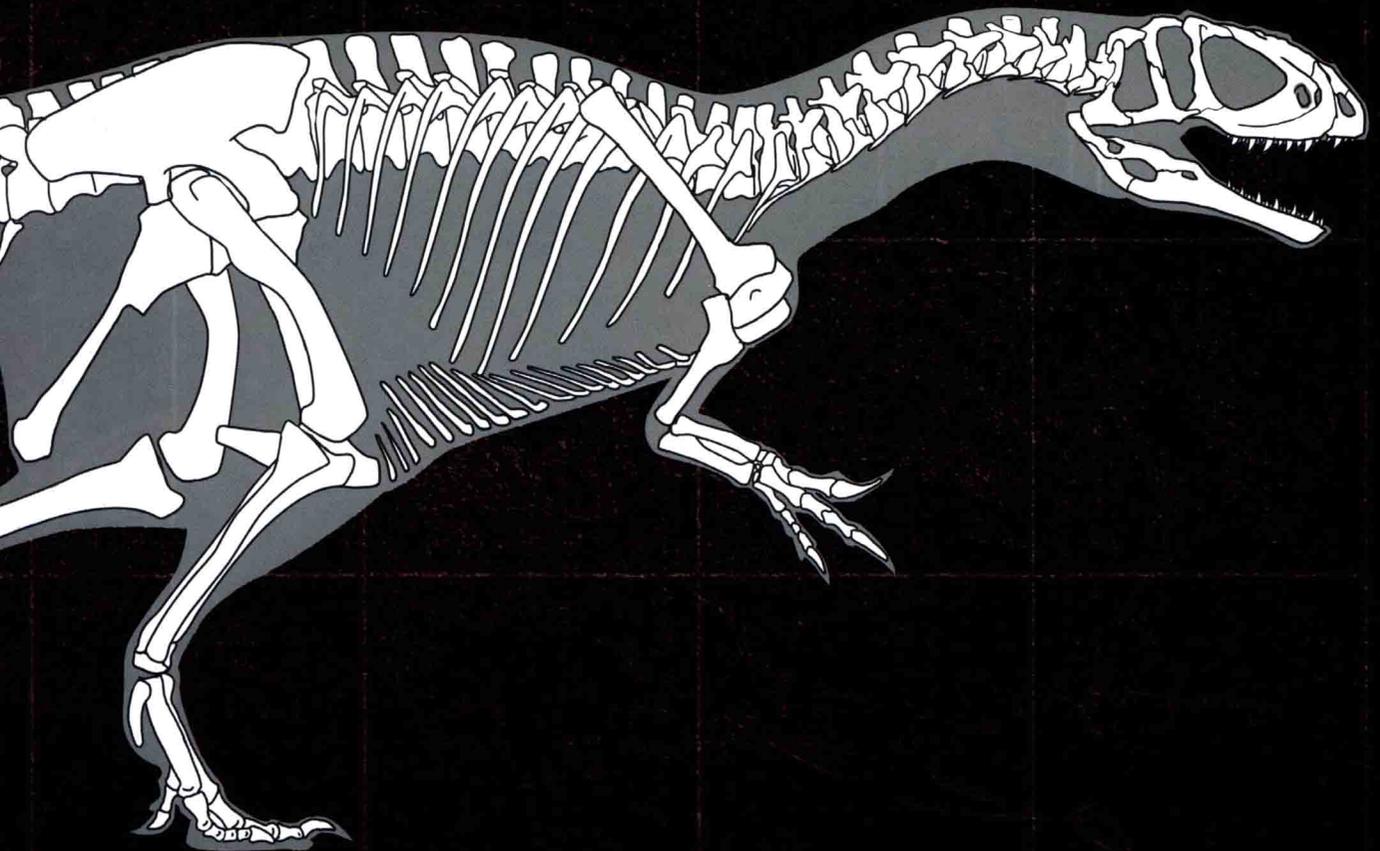
Young
1942

蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

肉食龙下目 Carnosauria



Szechuanosaurus campi Young, 1942



中文名称：甘氏四川龙

学名：*Szechuanosaurus campi* Young, 1942

释义：属名意为“发现于四川的蜥蜴”。

大小：体长约 8m, 高约 3m, 体重 500~1000kg

食性：肉食

生存年代：晚侏罗世，距今约 1.6 亿年

化石产地：中国四川

命名者：杨钟健

Taxonomic Name: *Szechuanosaurus campi* Young, 1942

Etymology: The generic name means "Sichuan lizard".

Body Size: around 8 meters long, 3 meters high, with an estimated weight of 500 to 1000 kg

Diet: Carnivore

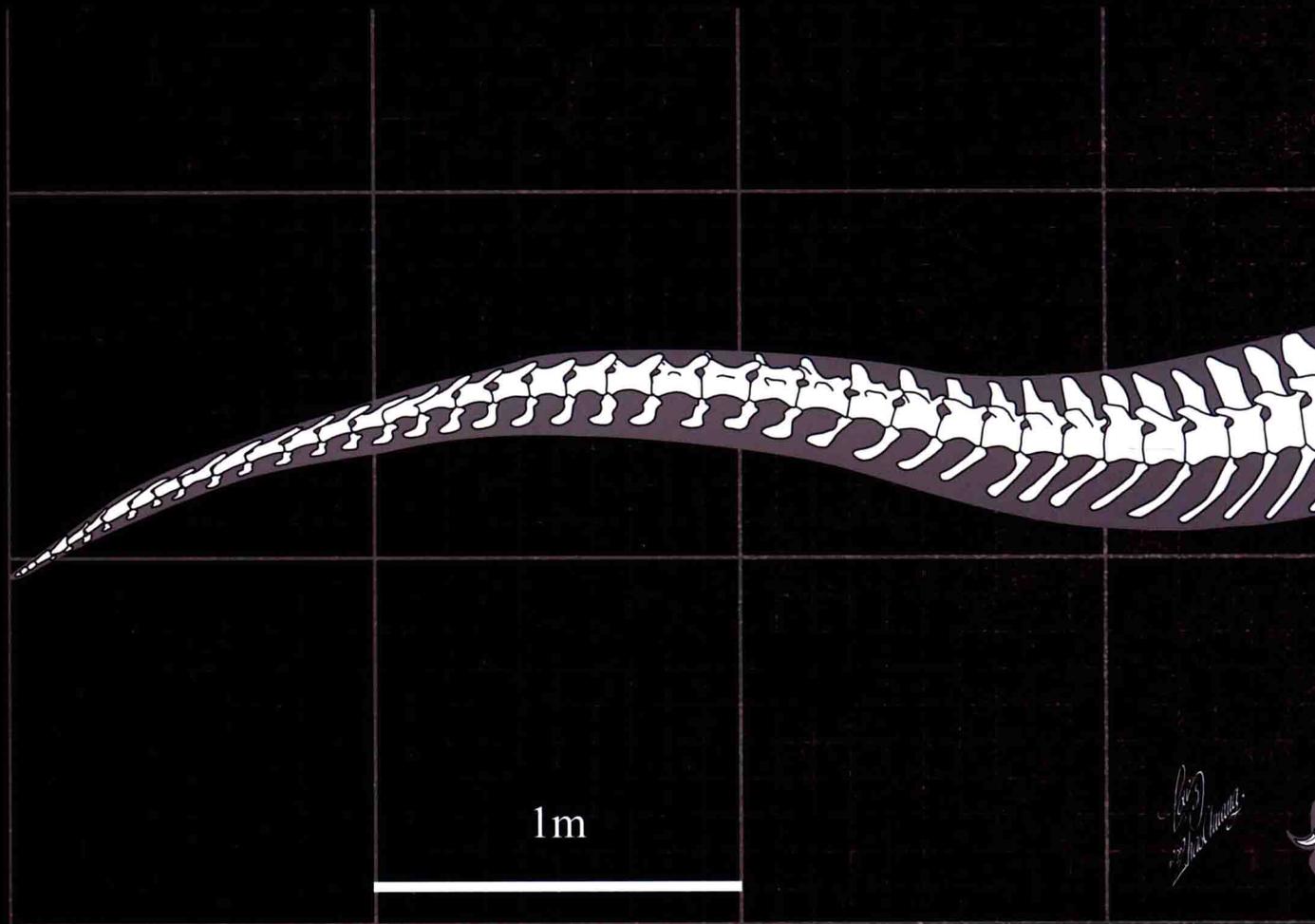
Age: the Late Jurassic, approximately 160 million years ago

Locality: Sichuan, China

First Described by: Zhongjian Yang



Sinraptor dongi Currie et Zhao, 1993



中文名称：董氏中华盗龙

学名：*Sinraptor dongi* Currie et Zhao, 1993

释义：属名意为“中国的盗贼”。

种名献给中国著名的古生物学家董枝明。

大小：体长 7-9m, 高约 2.5m, 体重 1000-3000kg

食性：肉食

生存年代：晚侏罗世, 距今约 1.6 亿年

化石产地：中国新疆

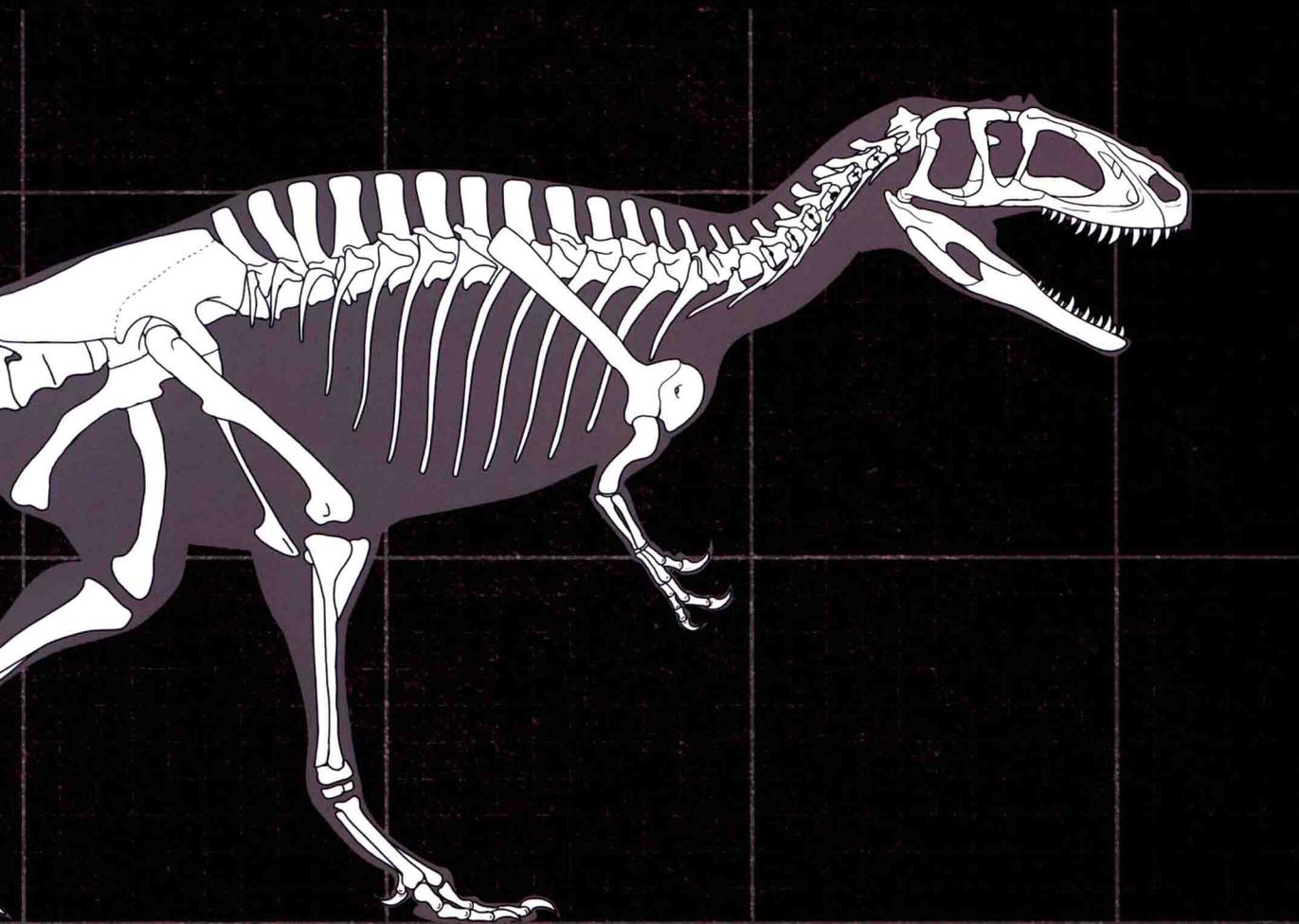
命名者：Philip J. Currie, 赵喜进

蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

肉食龙下目 Carnosauria



Taxonomic Name: *Sinraptor dongi* Currie et Zhao, 1993

Etymology: The generic name means "the Chinese thief".

The specific name honours the renowned the Chinese paleontologist Dong Zhiming.

Body Size: around 7 to 9 meters long, 2.5 meters high, with an estimated weight of 1000 to 3000 kg

Diet: Carnivore

Age: the Late Jurassic, approximately 160 million years ago

Locality: Xinjiang, China

First Described by: Philip J. Currie, Xijin Zhao

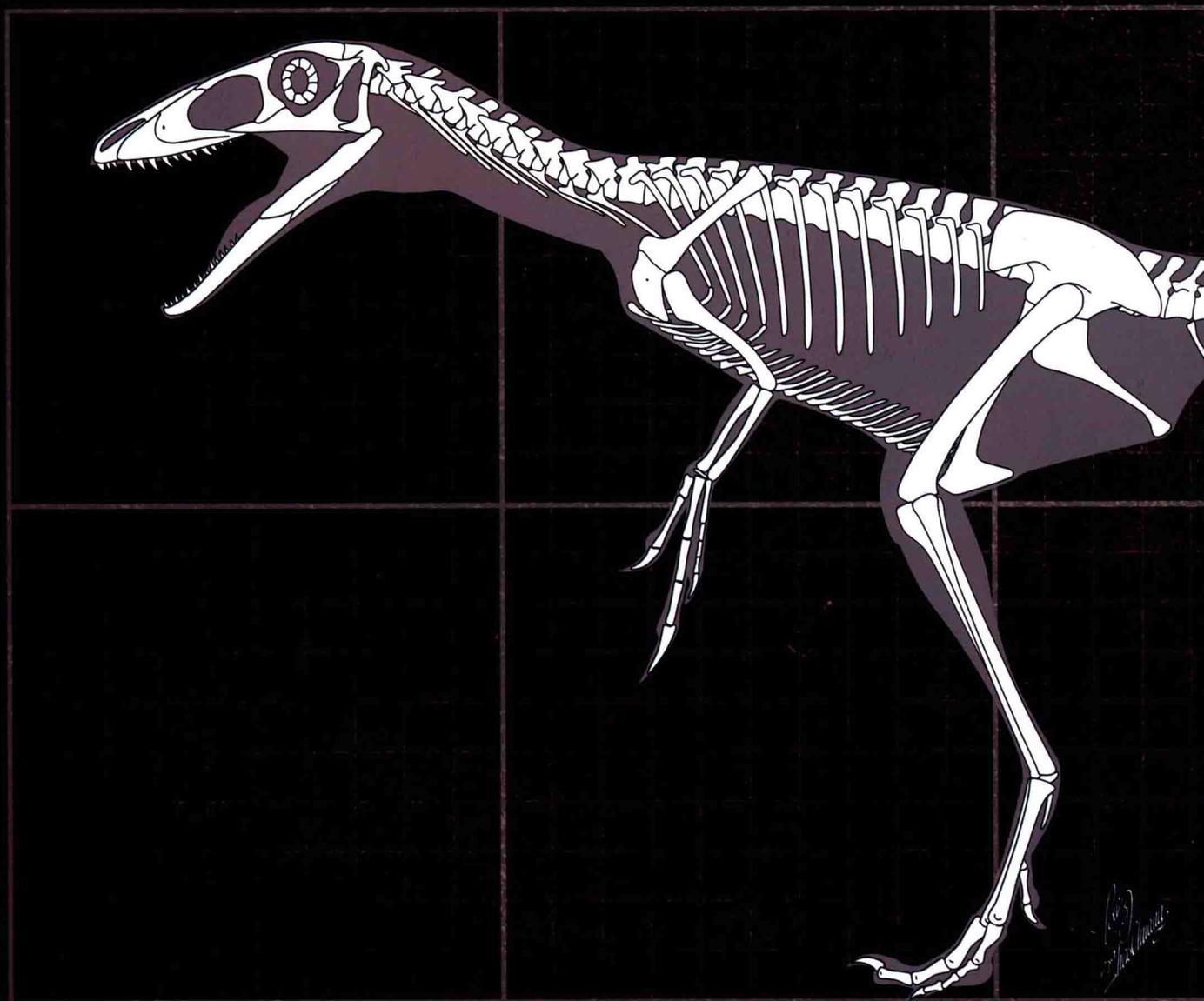
Sinraptor dongi Currie et Zhao, 1993





*Lucy
© 2013 Lucy*

Xinjiangovenator parvus Rauhut et Xu, 2005

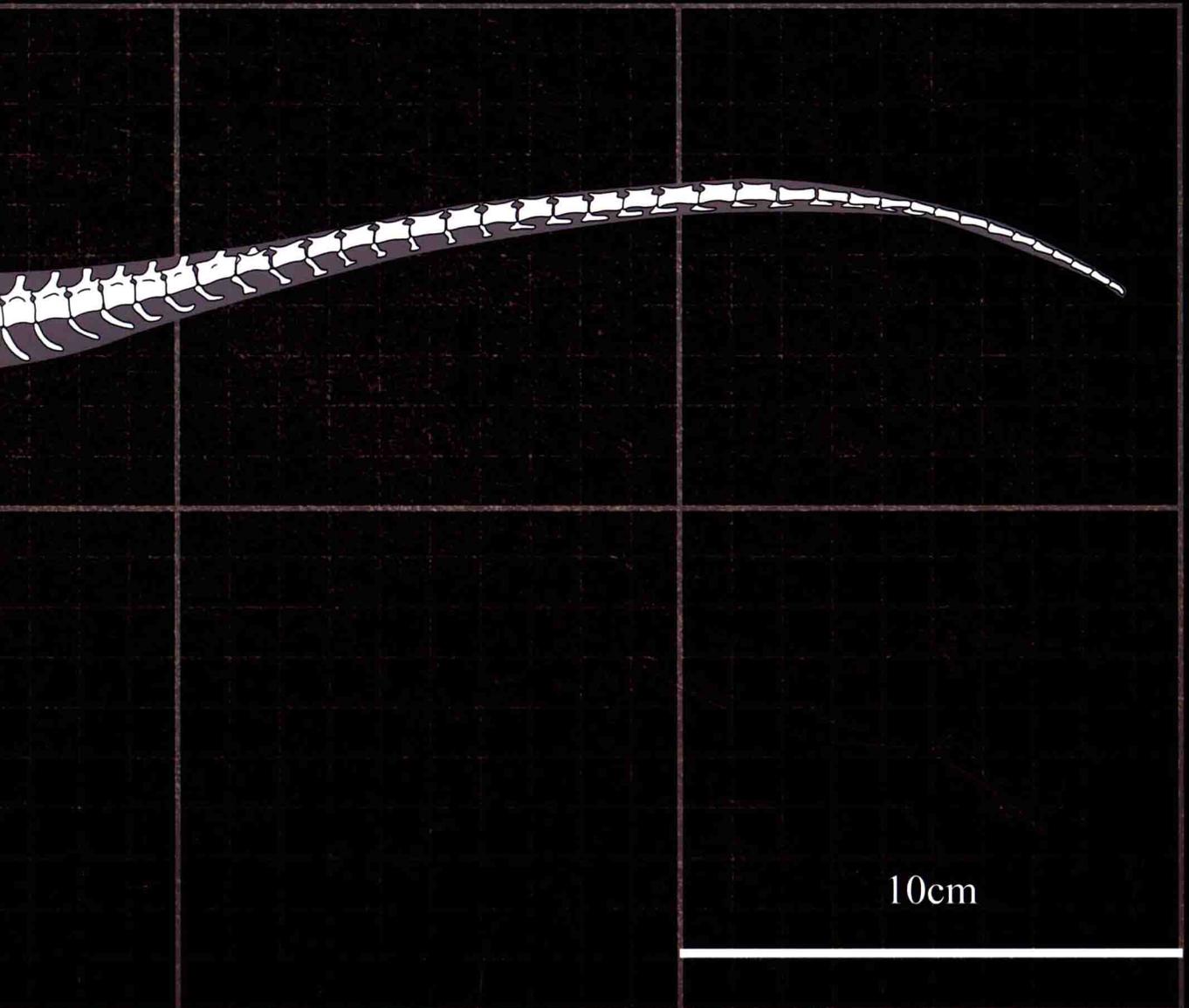


蜥臀目 Saurischia

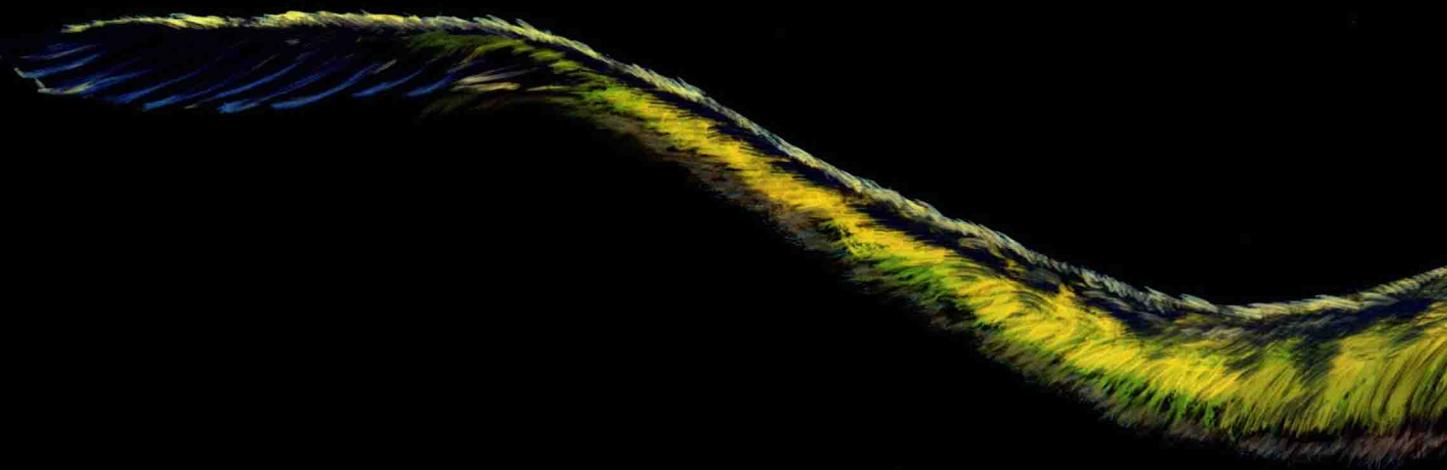
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

肉食龙下目 Carnosauria



Xinjiangovenator parvus Rauhut et Xu, 2005



中文名称：小新疆猎龙

学名：*Xinjiangovenator parvus* Rauhut et Xu, 2005

释义：属名意为“来自新疆的猎龙”。

种名意为“小的”。

大小：体长约 0.5m

食性：肉食

生存年代：早白垩世

化石产地：中国新疆

命名者：Oliver Rauhut, 徐星

Taxonomic Name: *Xinjiangovenator parvus* Rauhut et Xu, 2005

Etymology: The generic name means "Xinjiang hunter".

The specific name means "small".

Body Size: around 0.5 meters long

Diet: Carnivore

Age: the Early Cretaceous

Locality: Xinjiang, China

First Described by: Oliver Rauhut, Xing Xu

Oliver Rauhut
Xing Xu



Huaxiagnathus orientalis Hwang et al., 2004

中文名称：东方华夏颌龙

学名：*Huaxiagnathus orientalis* Hwang et al., 2004

释义：属名意为“华夏的颌骨”。

种名代表其化石发现于世界的东方。

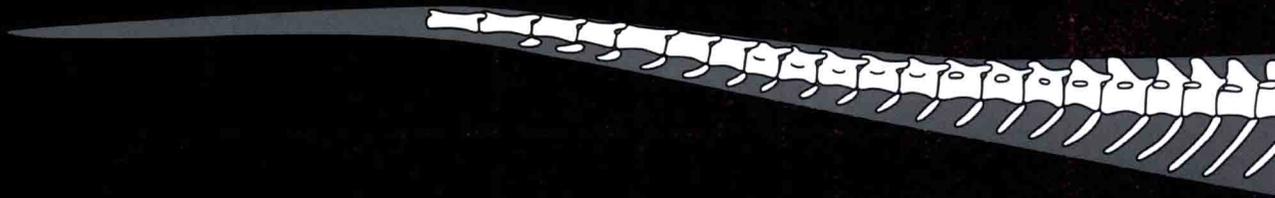
大小：体长约 1.8m, 高约 0.5m, 体重约 30kg

食性：肉食

生存年代：早白垩世，距今约 1.25 亿年

化石产地：中国辽宁

命名者：Sunny H. Hwang, Mark A. Norell, 季强等



50cm



蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

美颌龙科 Compsognathidae

Taxonomic Name: *Huaxiagnathus orientalis* Hwang et al., 2004

Etymology: The generic name means "Haxia (China) Jaw".

The specific name means "oriental".

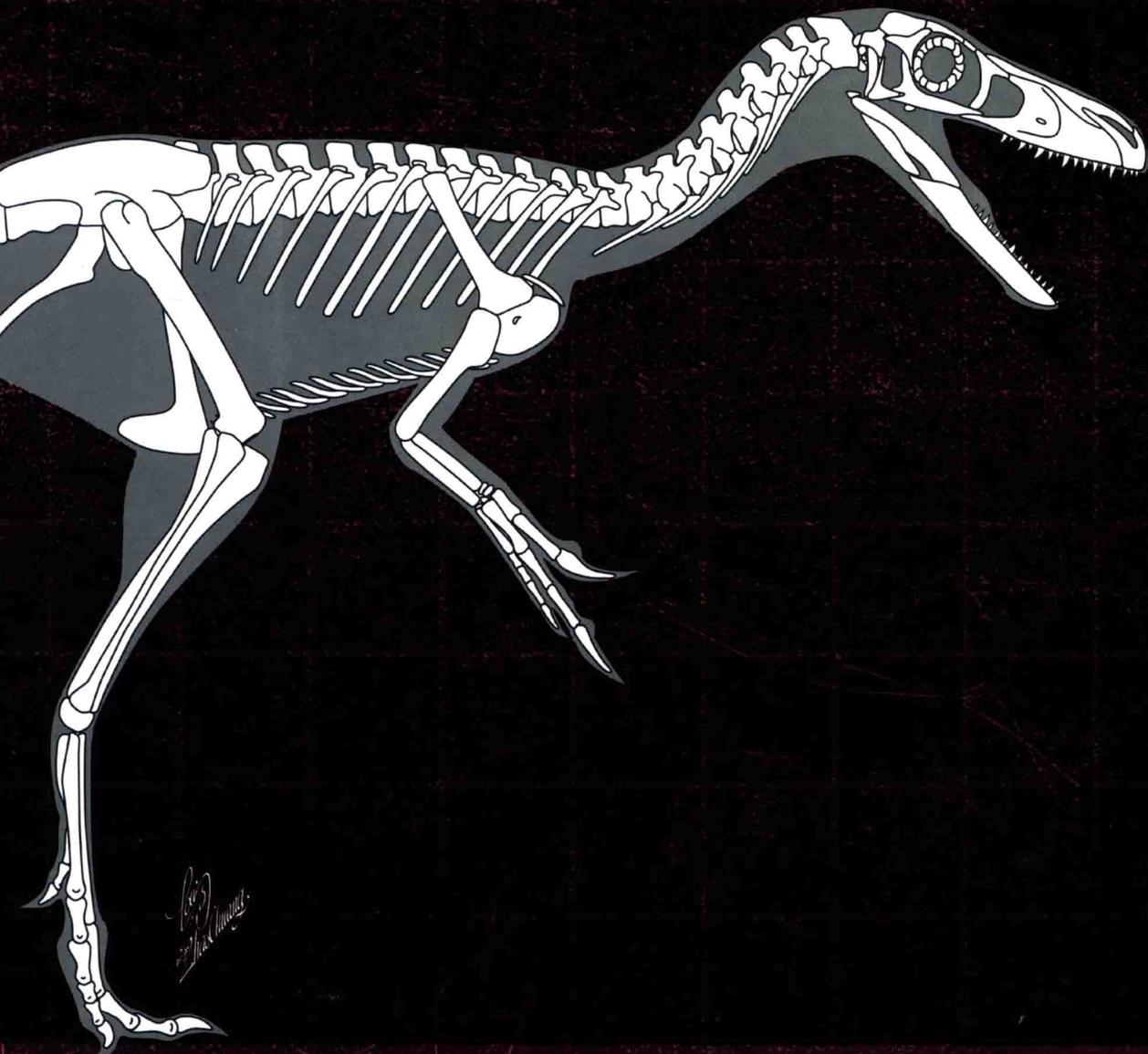
Body Size: around 1.8 meters long, 0.5 meters high, with an estimated weight of 30 kg

Diet: Carnivore

Age: the Early Cretaceous, approximately 125 million years ago

Locality: Liaoning, China

First Described by: Sunny H. Hwang, Mark A. Norell, Qiang Ji etc



Huaxiagnathus orientalis Hwang et al., 2004





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Michael Williams

Sinocalliopteryx gigas Ji et al., 2007



蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

美颌龙科 Compsognathidae

中文名称：巨型中华丽羽龙

学名：*Sinocalliopteryx gigas* Ji et al., 2007

释义：属名意为“中国的美丽翅膀”。

种名代表其属于美颌龙科中体型巨大的成员。

大小：体长约 2.37m, 高约 0.7m, 体重约 30kg

食性：肉食

生存年代：早白垩世，距今约 1.25 亿年

化石产地：中国辽宁

命名者：姬书安, 季强, 吕君昌等

Taxonomic Name: *Sinocalliopteryx gigas* Ji et al., 2007

Etymology: The generic name means "the Chinese beautiful feather".

The specific name means giant, in reference of its large body size.

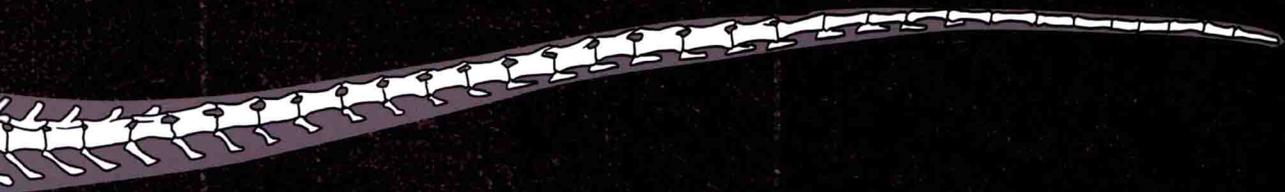
Body Size: around 2.37 meters long, 0.7 meters high, with an estimated weight of 30 kg

Diet: Carnivore

Age: the Early Cretaceous, approximately 125 million years ago

Locality: Liaoning, China

First Described by: Shu'an Ji, Qiang Ji, Junchang Lü etc



1m



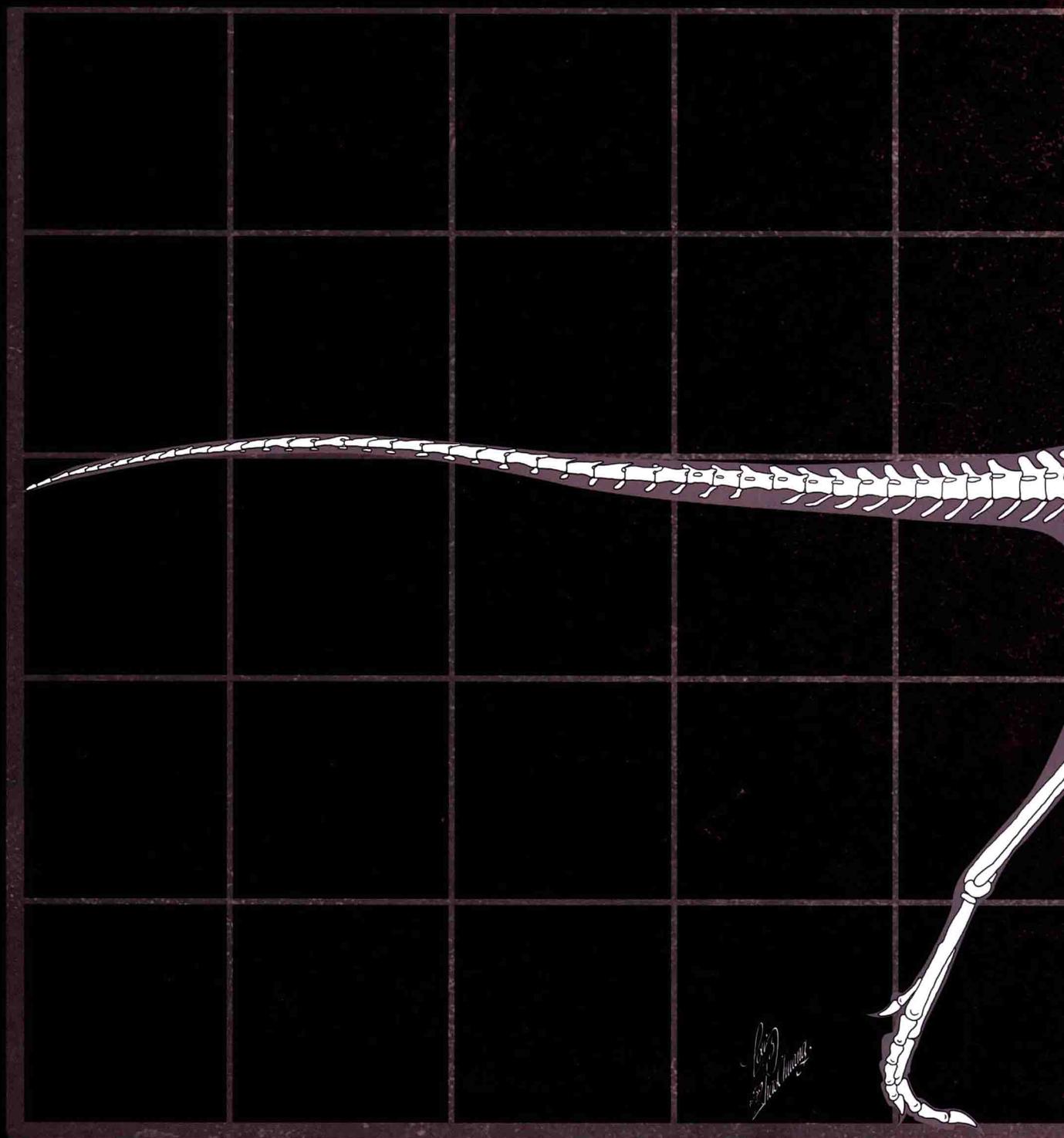
Sinocalliopteryx gigas Ji et al., 2007





*Art by
Black Wings*

Sinosauropteryx prima Ji et Ji, 1996



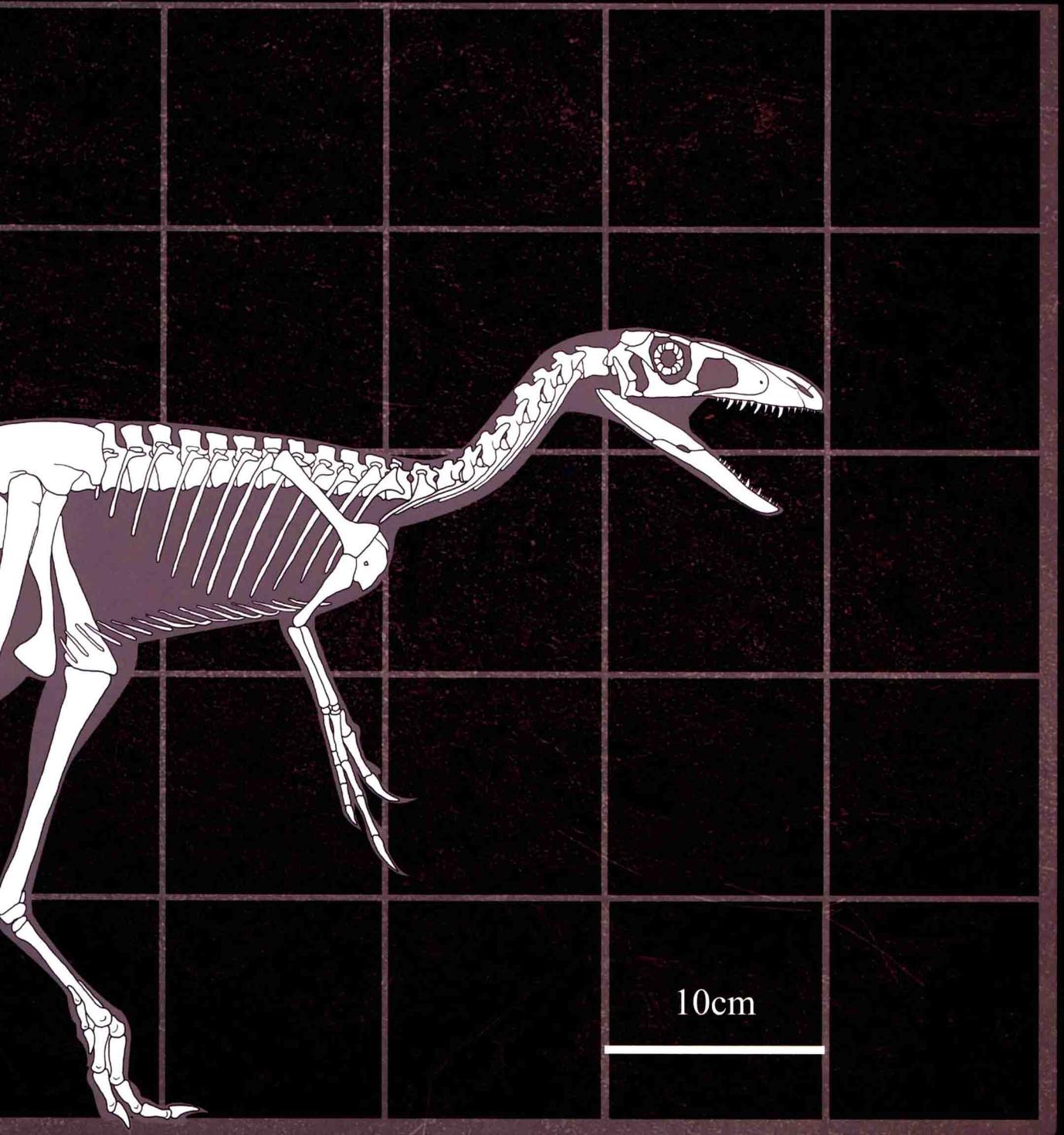
蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

美颌龙科 Compsognathidae



Sinosauropteryx prima Ji et Ji, 1996

中文名称：原始中华龙鸟

学名：*Sinosauropteryx prima* Ji et Ji, 1996

释义：属名意为“中国的有羽毛的蜥蜴”。

种名意指中华龙鸟是第一个被发现的有羽毛的恐龙。

大小：体长 0.9~2m

食性：肉食

生存年代：早白垩世

化石产地：中国辽宁

命名者：季强, 姬书安

Taxonomic Name: *Sinosauropteryx prima* Ji et Ji, 1996

Etymology: The generic name means "Chinese dragon bird".

The specific name means "first", referring to its status as the first feathered non-avian dinosaur species discovered.

Body Size: around 0.9 to 2 meters long

Diet: Carnivore

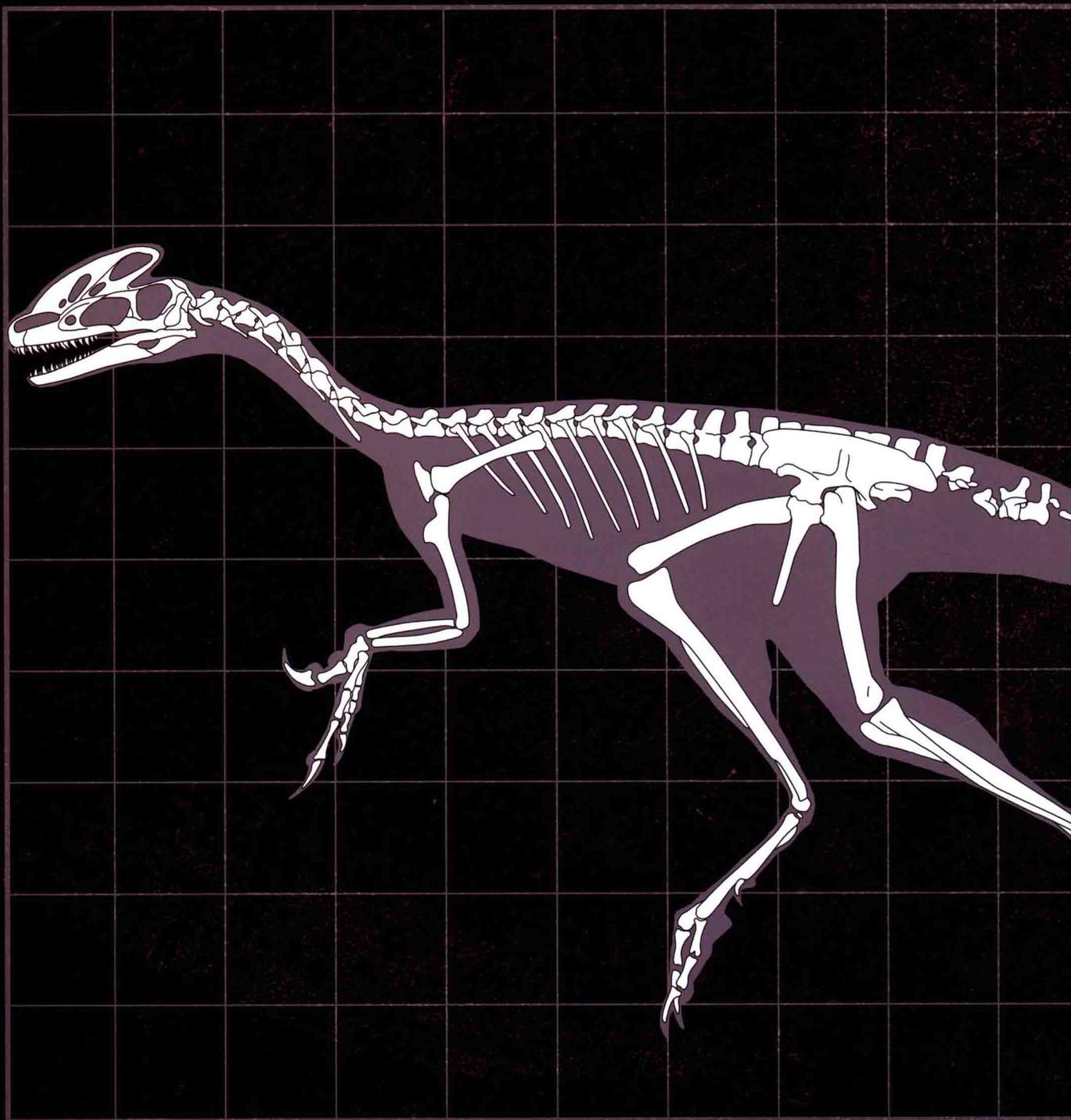
Age: the Early Cretaceous

Locality: Liaoning, China

First Described by: Qiang Ji, Shu'an Ji



Guanlong wucail Xu et al., 2006



蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

暴龙超科 Tyrannosauroidea

中文名称：五彩冠龙

学名：*Guanlong wucail* Xu et al., 2006

释义：属名意为“冠龙”，指其头上的头冠。
种名指其化石产地五彩湾。

大小：体长约 2m

食性：肉食

生存年代：晚侏罗世

化石产地：中国新疆

命名者：徐星，James M. Clark，Mark A. Norell 等

Taxonomic Name: *Guanlong wucail* Xu et al., 2006

Etymology: The generic name means "crown dragon".

The specific name means "five colours", referring to the colours of rock of the Wucaiwan, the multi-hued badlands where the creature was found.

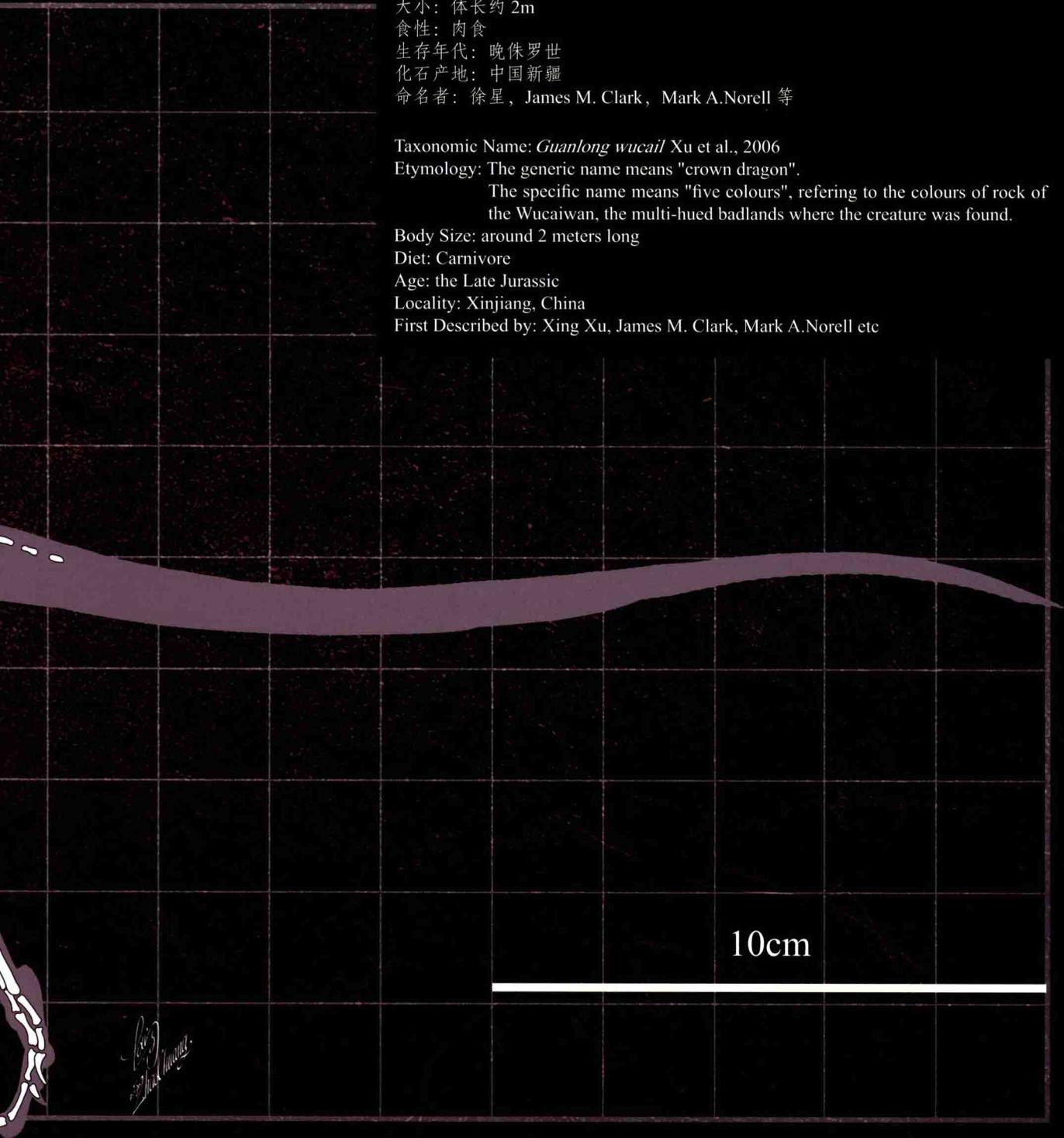
Body Size: around 2 meters long

Diet: Carnivore

Age: the Late Jurassic

Locality: Xinjiang, China

First Described by: Xing Xu, James M. Clark, Mark A. Norell etc



Guanlong wucail Xu et al., 2006



© 2006
Xu et al.



Xiongguanlong baimoensis Li et Makovicky, 2009

中文名称：白魔雄关龙

学名：*Xiongguanlong baimoensis* Li et Makovicky, 2009

释义：属名意为“雄关的龙”，雄关是嘉峪关的别名，此处是化石的发现地。

种名意为“白魔城”，是当地的奇特沙漠地貌。

大小：体长约 6m，高约 1.5m，体重约 280kg

食性：肉食

生存年代：早白垩世，距今 1.25 亿年~1 亿年

化石产地：中国甘肃

命名者：李大庆，Peter Makovicky



蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

暴龙超科 Tyrannosauoidea

Taxonomic Name: *Xiongguanlong baimoensis* Li et Makovicky, 2009

Etymology: The generic name means "Xiongguan dragon".

The specific name means "white ghost castle", a rock formation near the fossil site.

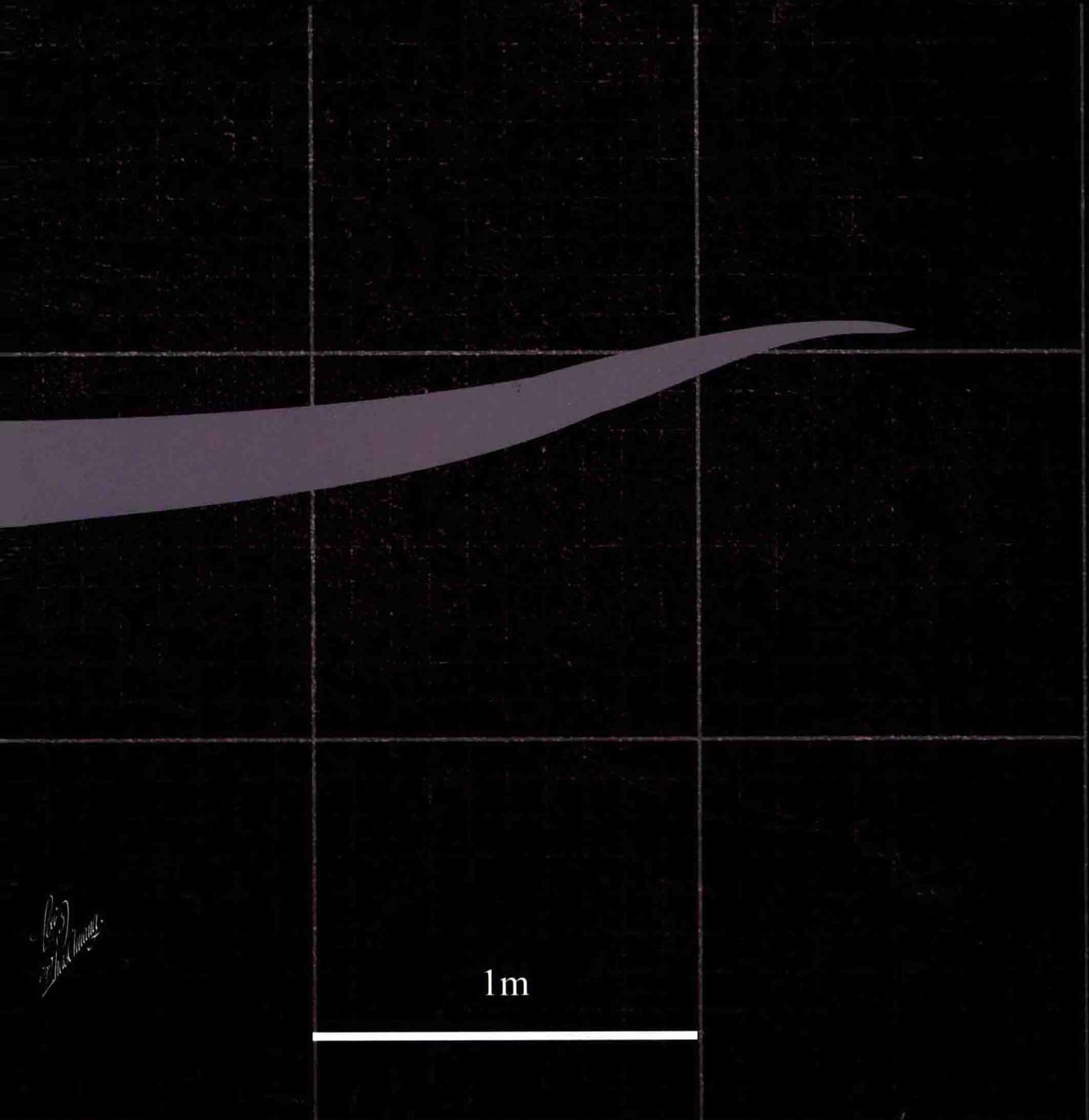
Body Size: around 6 meters long, 1.5 meters high, with an estimated weight of 280 kg

Diet: Carnivore

Age: the Early Cretaceous, approximately 125 to 100 million years ago

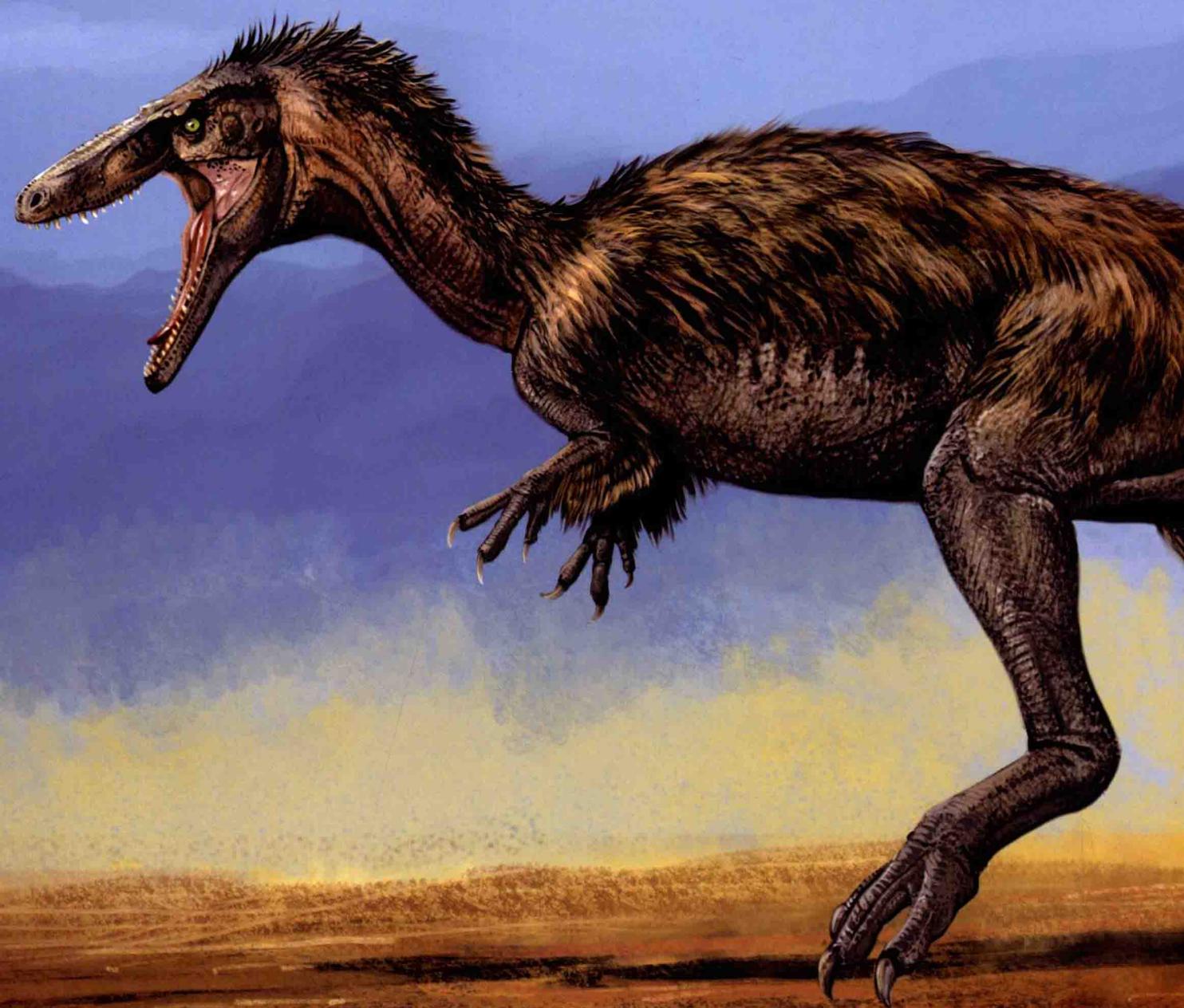
Locality: Gansu, China

First Described by: Daqing Li, Peter Makovicky



Li et Makovicky, 2009

Xiongguanlong baimoensis Li et Makovicky, 2009

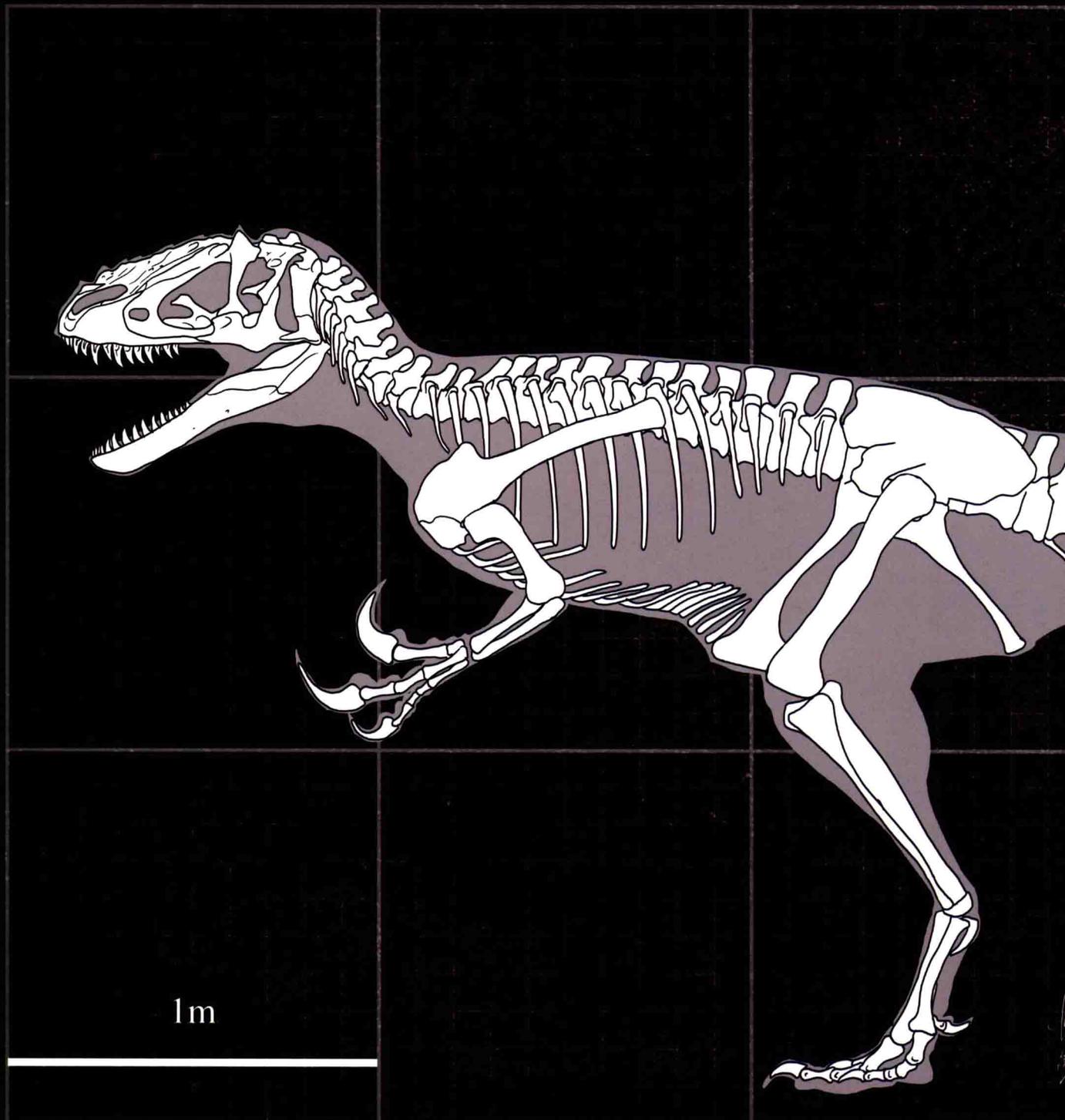




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Yutyranus huali Xu et al., 2012

亚成年体骨骼复原



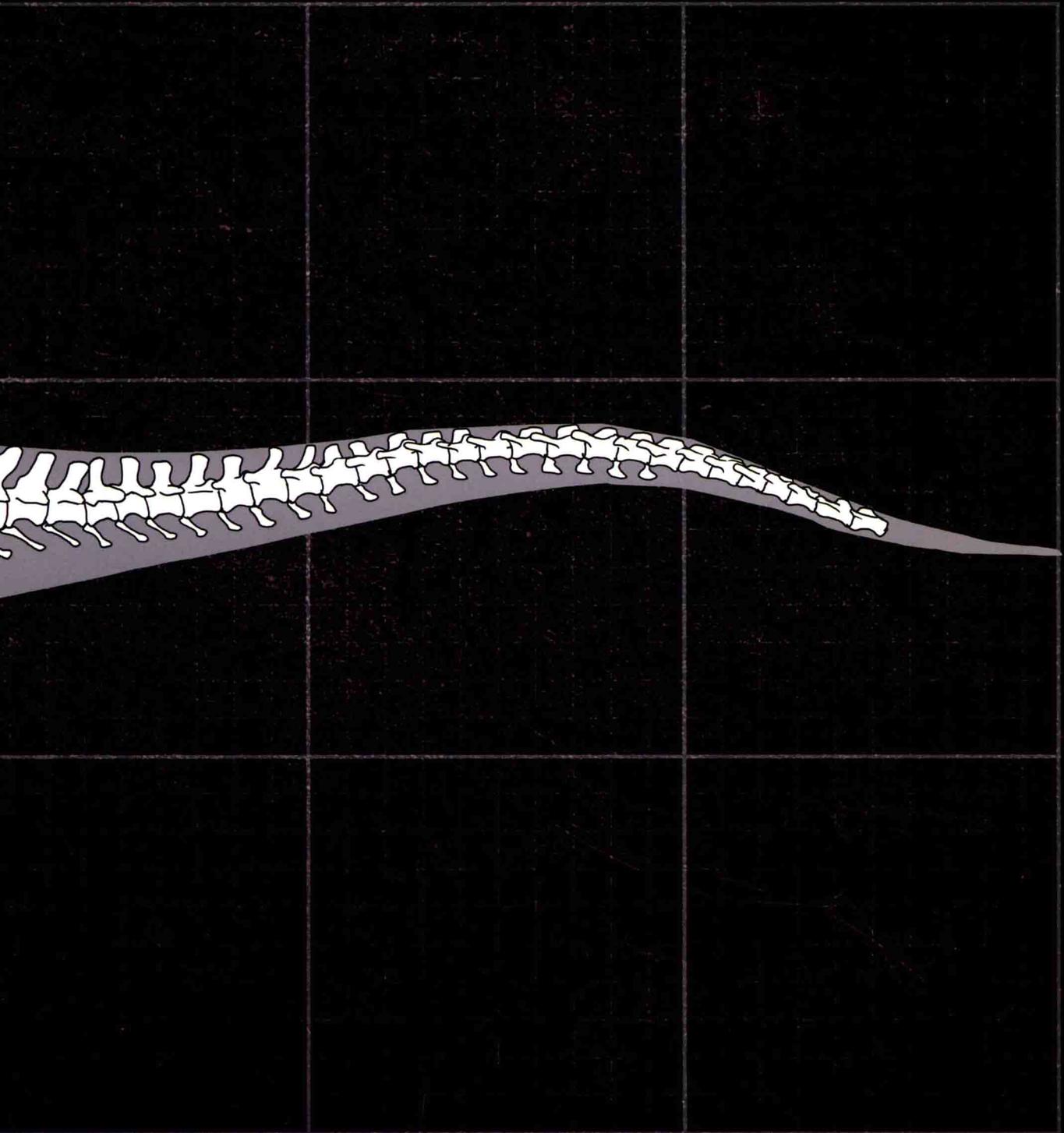
蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

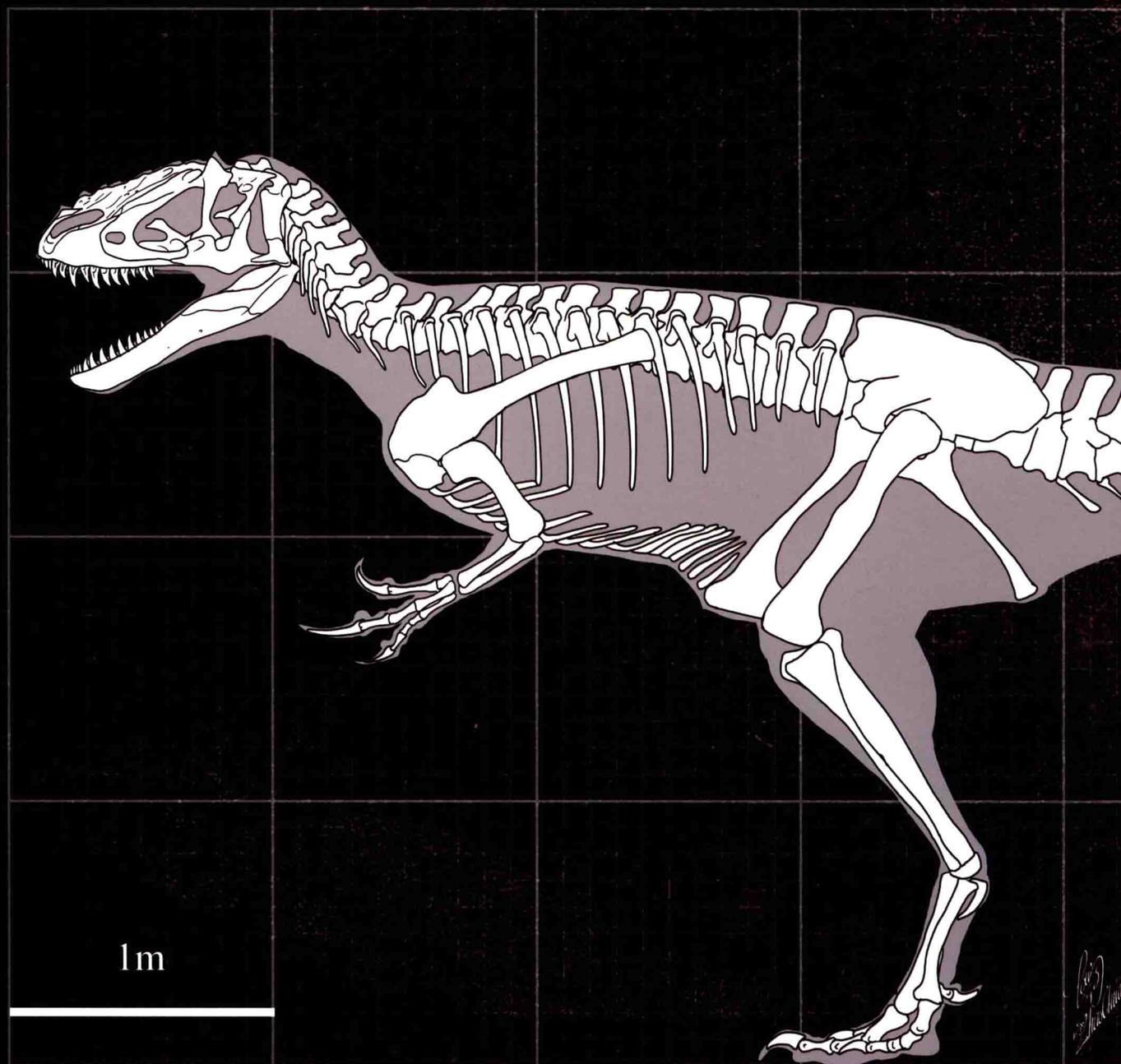
虚骨龙类 Coelurosauria

暴龙超科 Tyrannosauroidea

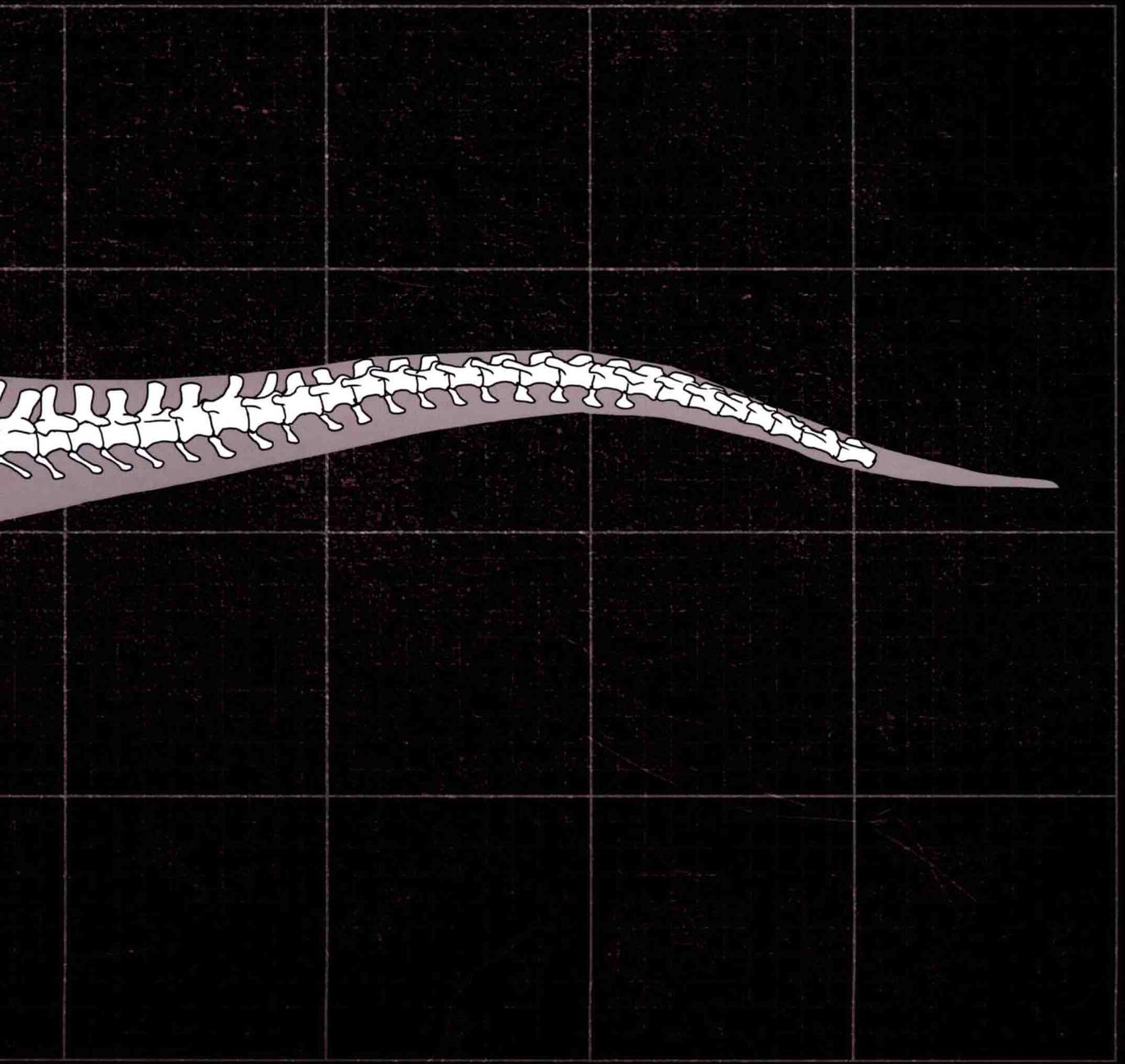


Yutyranus huali Xu et al., 2012

成年体骨骼复原



© Xu et al., 2012





Art by [Signature]

Yutyranus huali Xu et al., 2012

中文名称：华丽羽王龙

学名：*Yutyranus huali* Xu et al., 2012

释义：属名意为“羽暴龙”。

种名意为“华丽的”。

大小：成年个体体长约 9m, 体重约 1400kg

食性：肉食

生存年代：早白垩世，距今约 1.25 亿年

化石产地：中国辽宁

命名者：徐星，王克柏，Corwin Sullivan 等

Taxonomic Name: *Yutyranus huali* Xu et al., 2012

Etymology: The generic name means "Tyrannosaurus with feather".

The specific name means "Gorgeous".

Body Size: around 9 meters long, with an estimated weight of 1400 kg

Diet: Carnivore

Age: the Early Cretaceous, approximately 125 million years ago

Locality: Liaoning, China

First Described by: Xing Xu, Kebai Wang, Corwin Sullivan etc

Zhuchengtyrannus magnus Hone et al., 2011

中文名称：巨型诸城暴龙

学名：*Zhuchengtyrannus magnus* Hone et al., 2011

释义：属名意为“诸城的暴君”。

种名指其体型巨大。

大小：体长约 11m, 高约 4m, 体重约 6000kg

食性：肉食

生存年代：晚白垩世，距今约 9900 万年 ~6500 万年

化石产地：中国山东

命名者：David W. E. Hone, Corwin Sullivan, 赵喜进, 徐星, 季强, 王克柏, 李敦景等

Taxonomic Name: *Zhuchengtyrannus magnus* Hone et al., 2011

Etymology: The generic name means "Zhucheng tyrant".

The specific name means "great", in reference to its huge body.

Body Size: around 11 meters long, 4 meters high, with an estimated weight of 6000 kg

Diet: Carnivore

Age: the Late Cretaceous, approximately 99 to 65 million years ago

Locality: Shandong, China

First Described by: David W. E. Hone, Corwin Sullivan, Xijin Zhao, Xing Xu, Qiang Ji, Kebai Wang, Dunjing Li etc

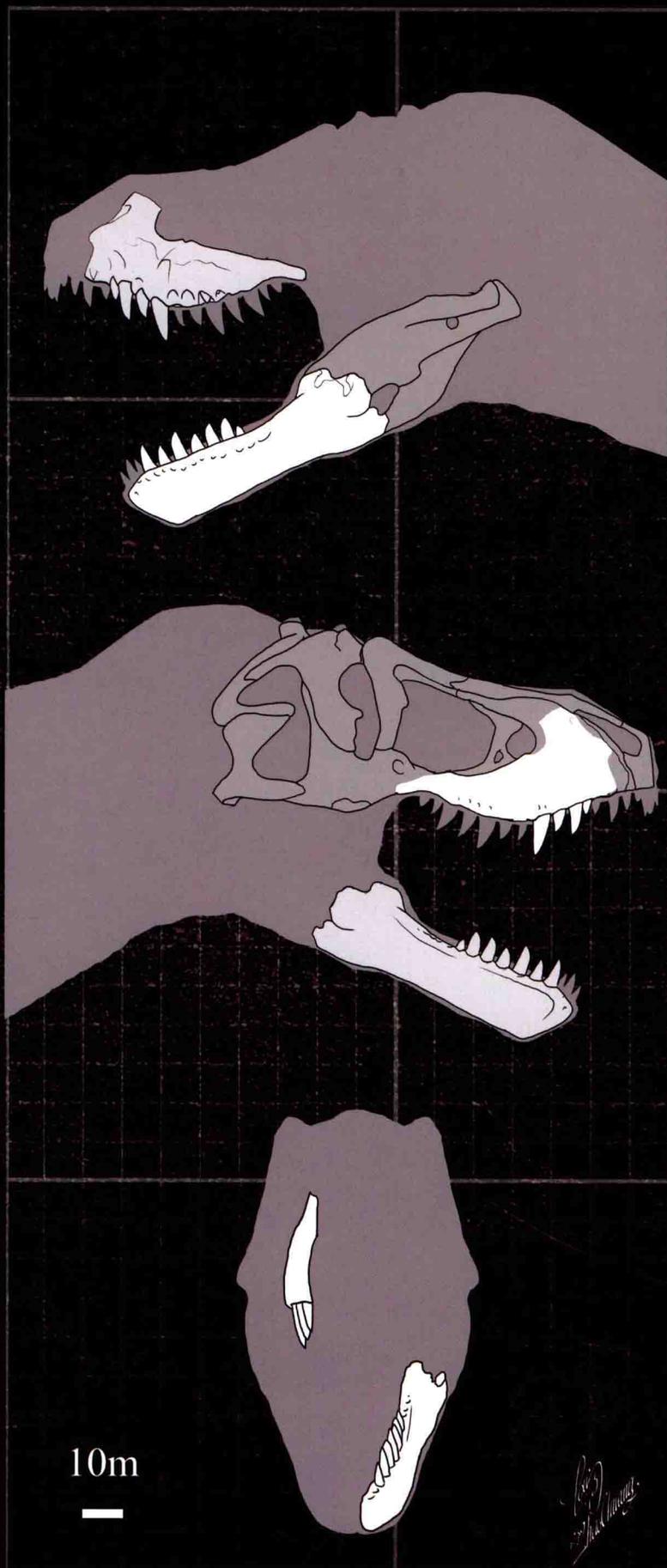
蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

暴龙超科 Tyrannosauoidea



Zhuchengtyrannus magnus Hone et al., 2011





© 2003
Michael W. Smith

Shenzhousaurus orientalis Ji et al., 2003

中文名称：东方神州龙

学名：*Shenzhousaurus orientalis* Ji et al., 2003

释义：属名意为“神州的蜥蜴”。
种名意为“东方”。

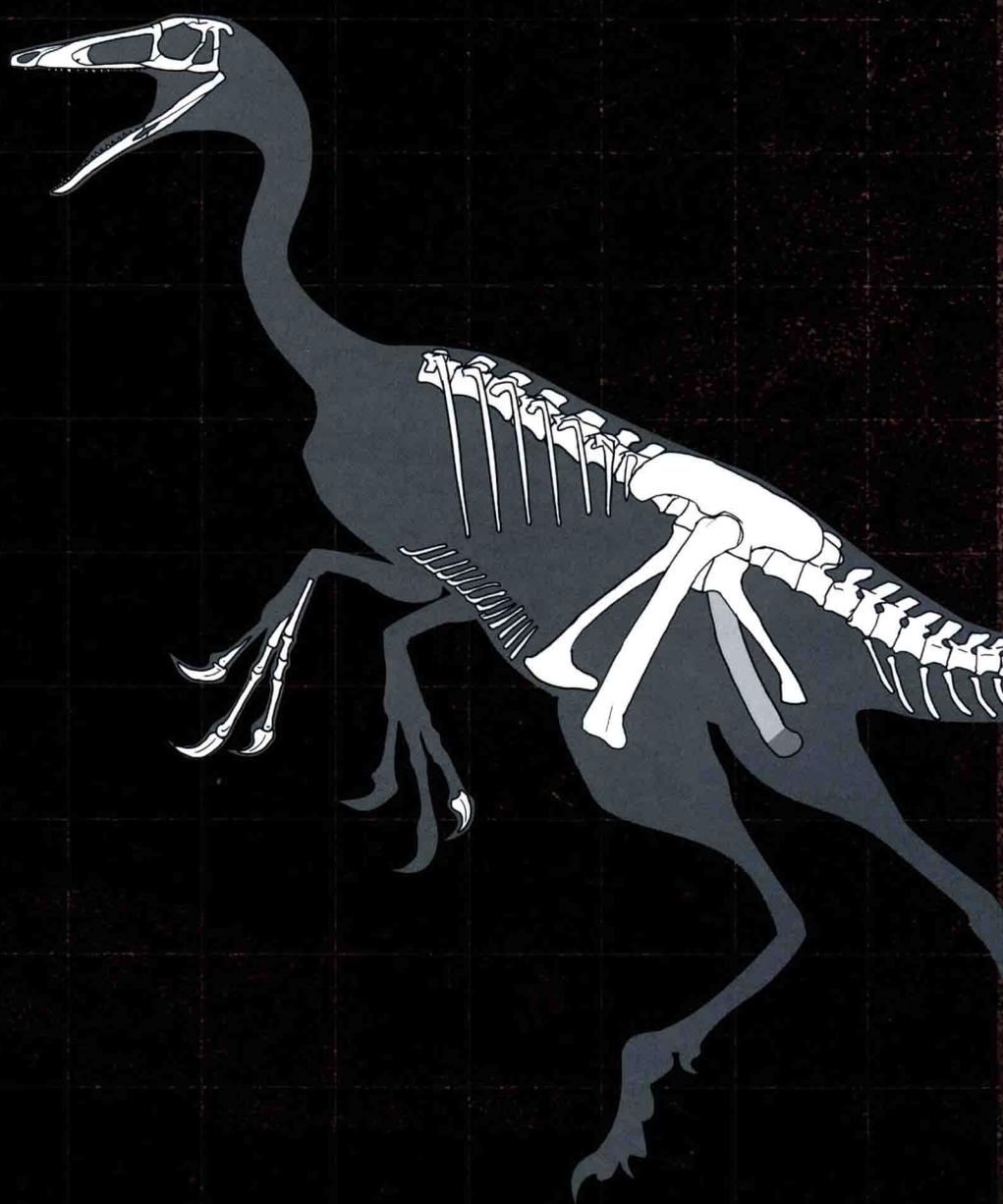
大小：体长约 2m

食性：杂食

生存年代：早白垩世

化石产地：中国辽宁

命名者：季强, Mark A. Norell, Peter J. Makovicky, 姬书安等



蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

似鸟龙下目 Ornithomimosauria

Taxonomic Name: *Shenzhousaurus orientalis* Ji et al., 2003

Etymology: The generic name means "Shenzhou (China) lizard".

The specific name means "oriental".

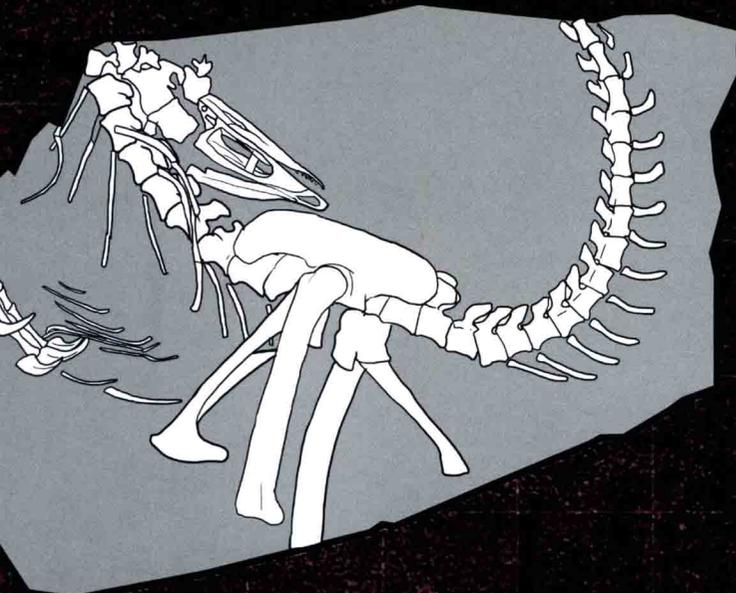
Body Size: around 2 meters long

Diet: Omnivore

Age: the Early Cretaceous

Locality: Liaoning, China

First Described by: Qiang Ji, Mark A. Norell, Peter J. Makovicky, Shu'an Ji etc



50cm



Qiang Ji
Mark A. Norell
Peter J. Makovicky
Shu'an Ji

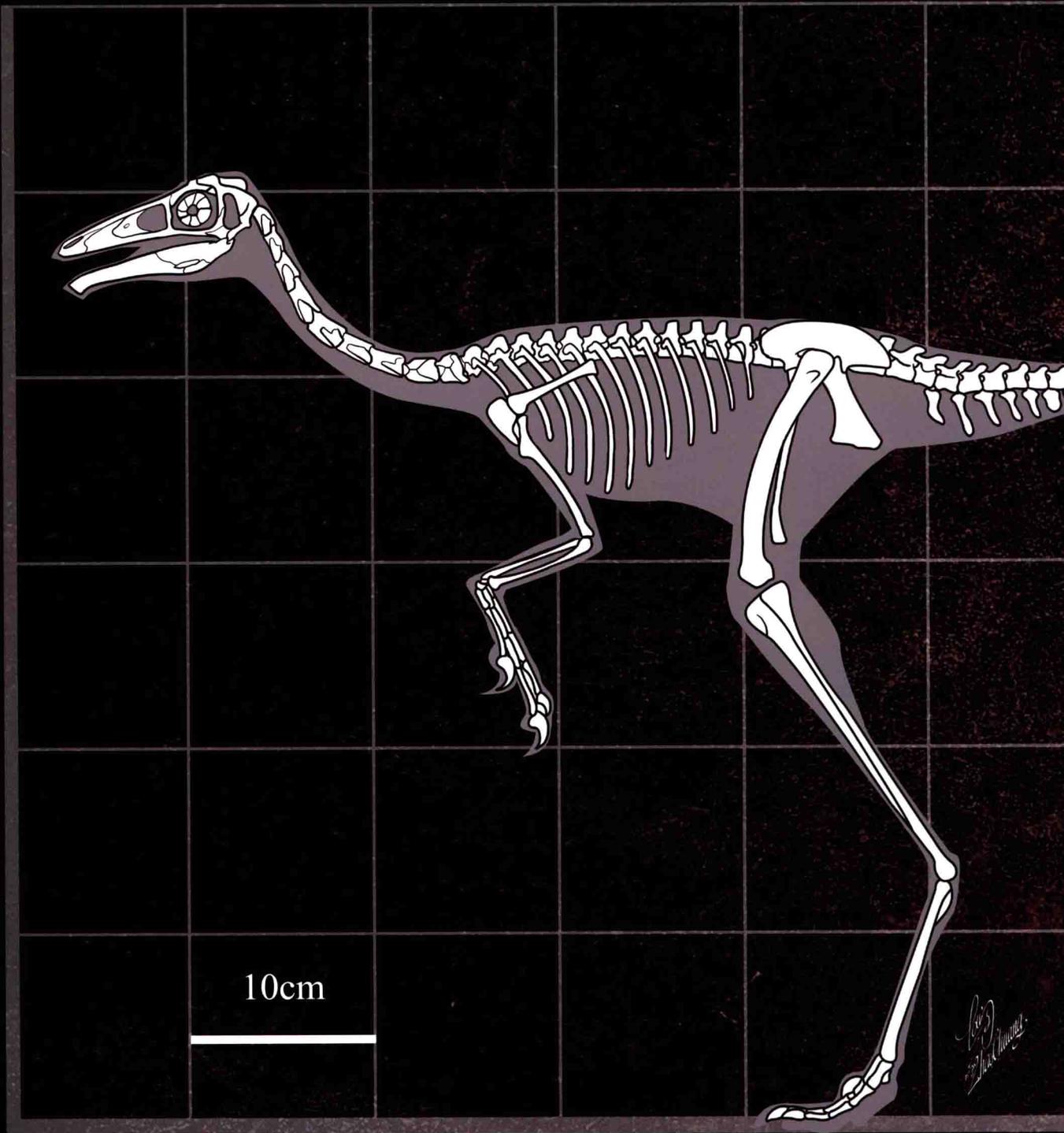
Shenzhousaurus orientalis Ji et al., 2003





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Black Museum

Sinornithoides youngi Russell et Dong, 1993



中文名称：杨氏中国似鸟龙

学名：*Sinornithoides youngi* Russell et Dong, 1993

释义：属名意为“中国的鸟类模仿者”。

种名献给中国古生物奠基人杨钟健教授。

大小：体长 0.6~1m

食性：肉食

生存年代：早白垩世

化石产地：中国内蒙古

命名者：Dale Russell, 董枝明

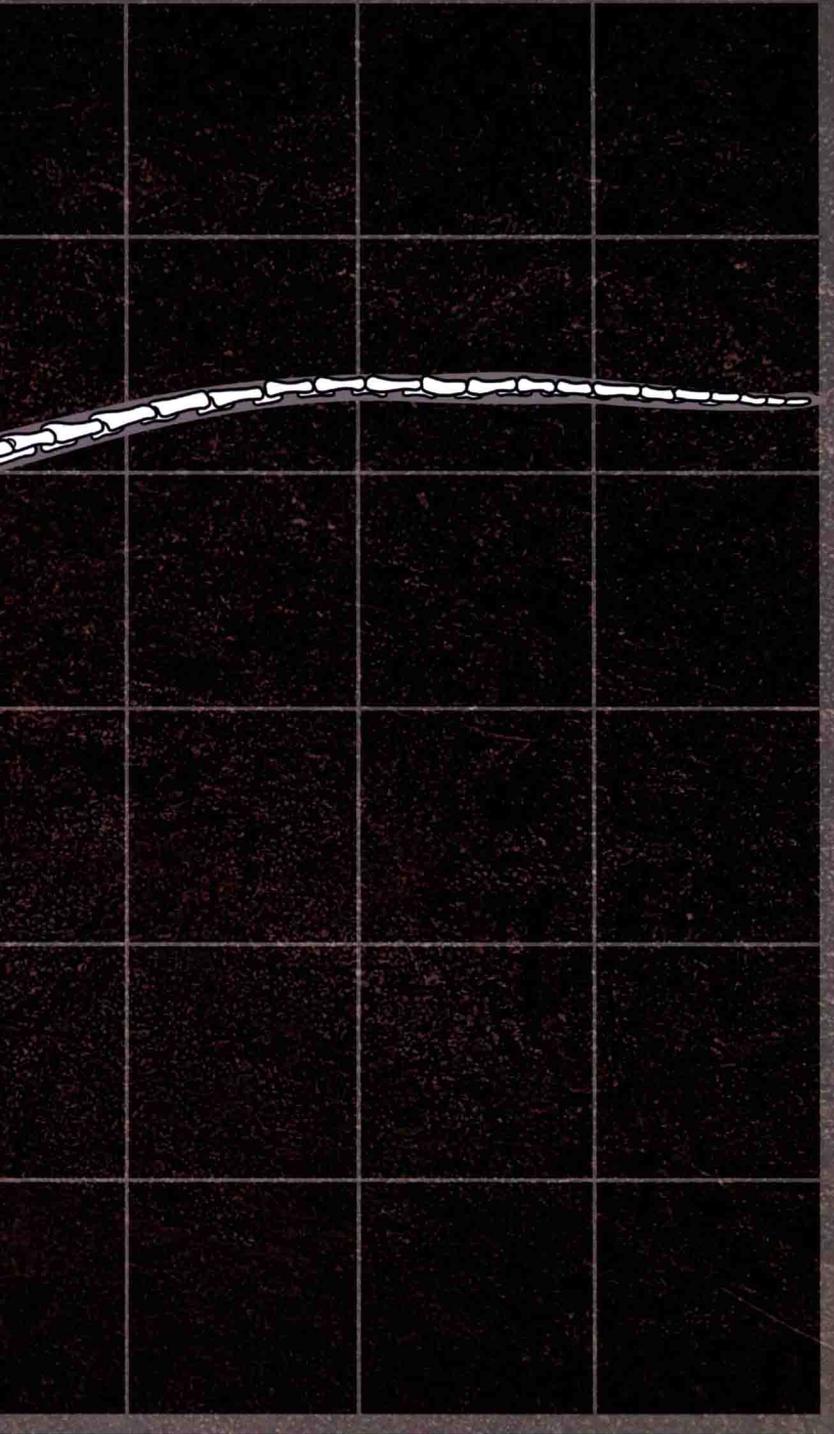
蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

似鸟龙下目 Ornithomimosauria



Taxonomic Name: *Sinornithoides youngi* Russell et Dong, 1993

Etymology: The generic name means "Chinese bird form".

The specific name honors the renown Chinese paleontologists Yang Zhongjian, the founder of the Chinese paleontology.

Body Size: around 0.6 to 1 meter long

Diet: Carnivore

Age: the Early Cretaceous

Locality: Inner Mongolia, China

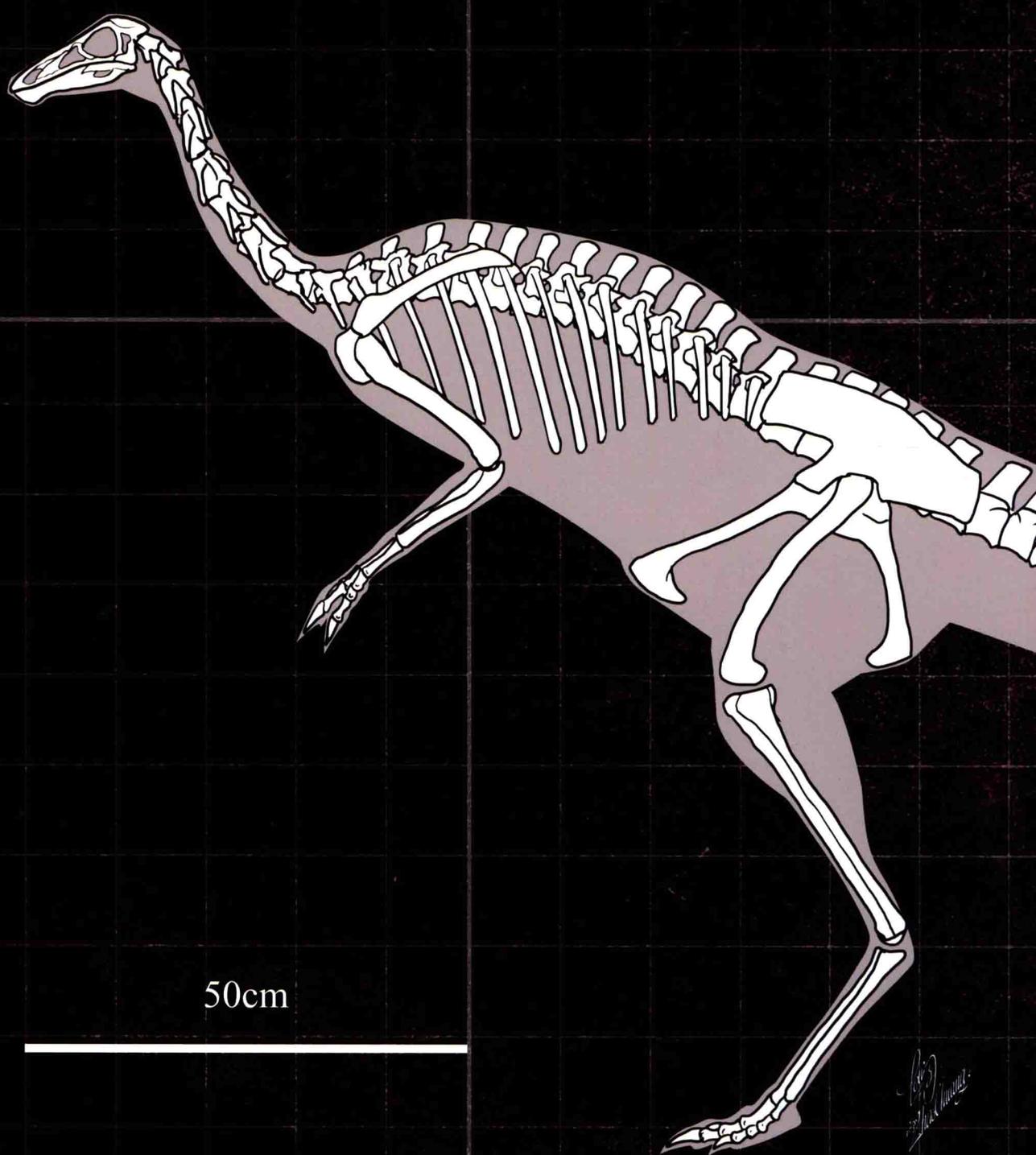
First Described by: Dale Russell, Zhiming Dong

Sinornithoides youngi Russell et Dong, 1993





Archaeornithomimus asiaticus (Gilmore, 1933) Russell, 1977



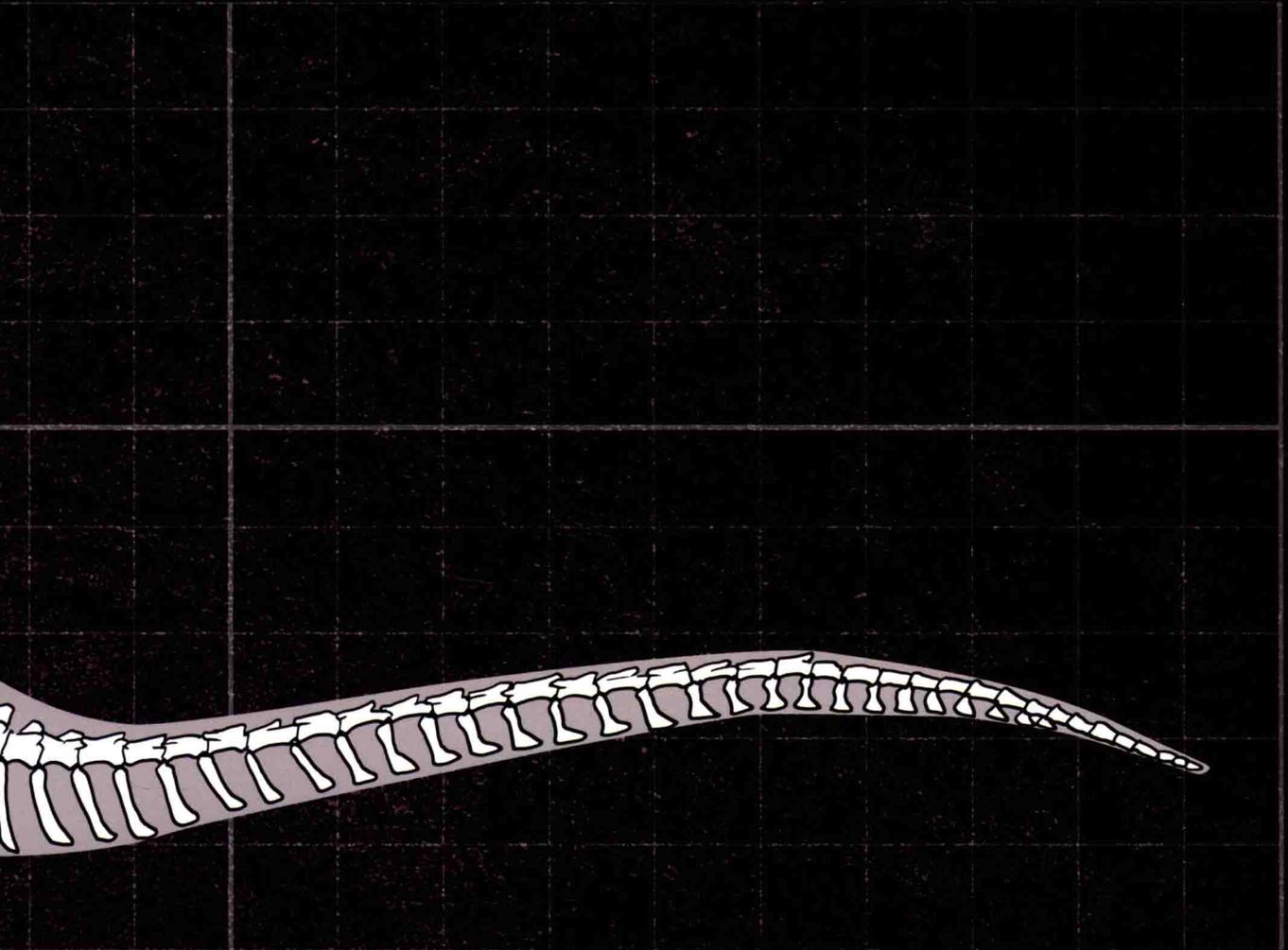
蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

似鸟龙下目 Ornithomimosauria



中文名称：亚洲古似鸟龙

学名：*Archacornithomimus asiaticus* (Gilmore, 1933) Russell, 1977

释义：属名意为“在鸟类模仿者之前”。

种名意为亚洲的。

大小：体长 2~2.5m

食性：杂食

生存年代：晚白垩世，距今约 8000 万年

化石产地：中国内蒙古

命名者：Charles W. Gilmore, Dale Russell

Taxonomic Name: *Archacornithomimus asiaticus* (Gilmore, 1933) Russell, 1977

Etymology: The generic name means "ancient bird mimic".

The specific name refers to the Asian provenance

Body Size: around 2 to 2.5 meters long

Diet: Omnivore

Age: the Late Cretaceous, approximately 80 million years ago

Locality: Inner Mongolia, China

First Described by: Charles W. Gilmore, Dale Russell

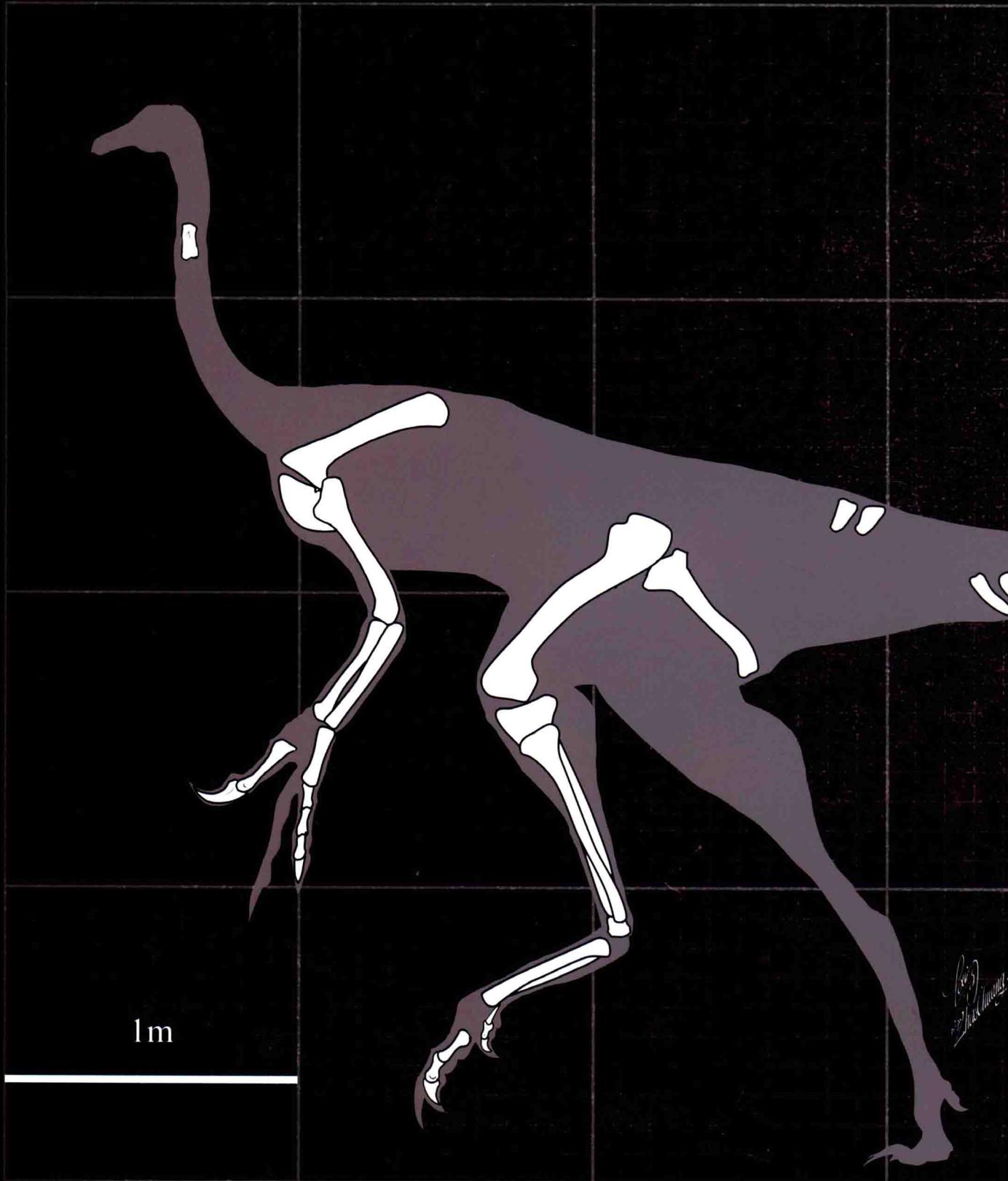
Archaeornithomimus asiaticus (Gilmore, 1933) Russell, 1977





Art by [Signature]

Beishanlong grandis Makovicky et al., 2010



蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

似鸟龙下目 Ornithomimosauria

中文名称：巨大北山龙

学名：*Beishanlong grandis* Makovicky et al., 2010

释义：属名指其发现地。

种名指“巨大的”。

大小：体长约 6~8m, 体重约 620kg

食性：杂食

生存年代：早白垩世，距今约 1 亿年

化石产地：中国甘肃

命名者：Peter J. Makovicky, 李大庆, 高克勤等

Taxonomic Name: *Beishanlong grandis* Makovicky et al., 2010

Etymology: The generic name means "North Mountain Dragon".

The specific name means "large".

Body Size: around 6 to 8 meters long, with an estimated weight of 620 kg

Diet: Omnivore

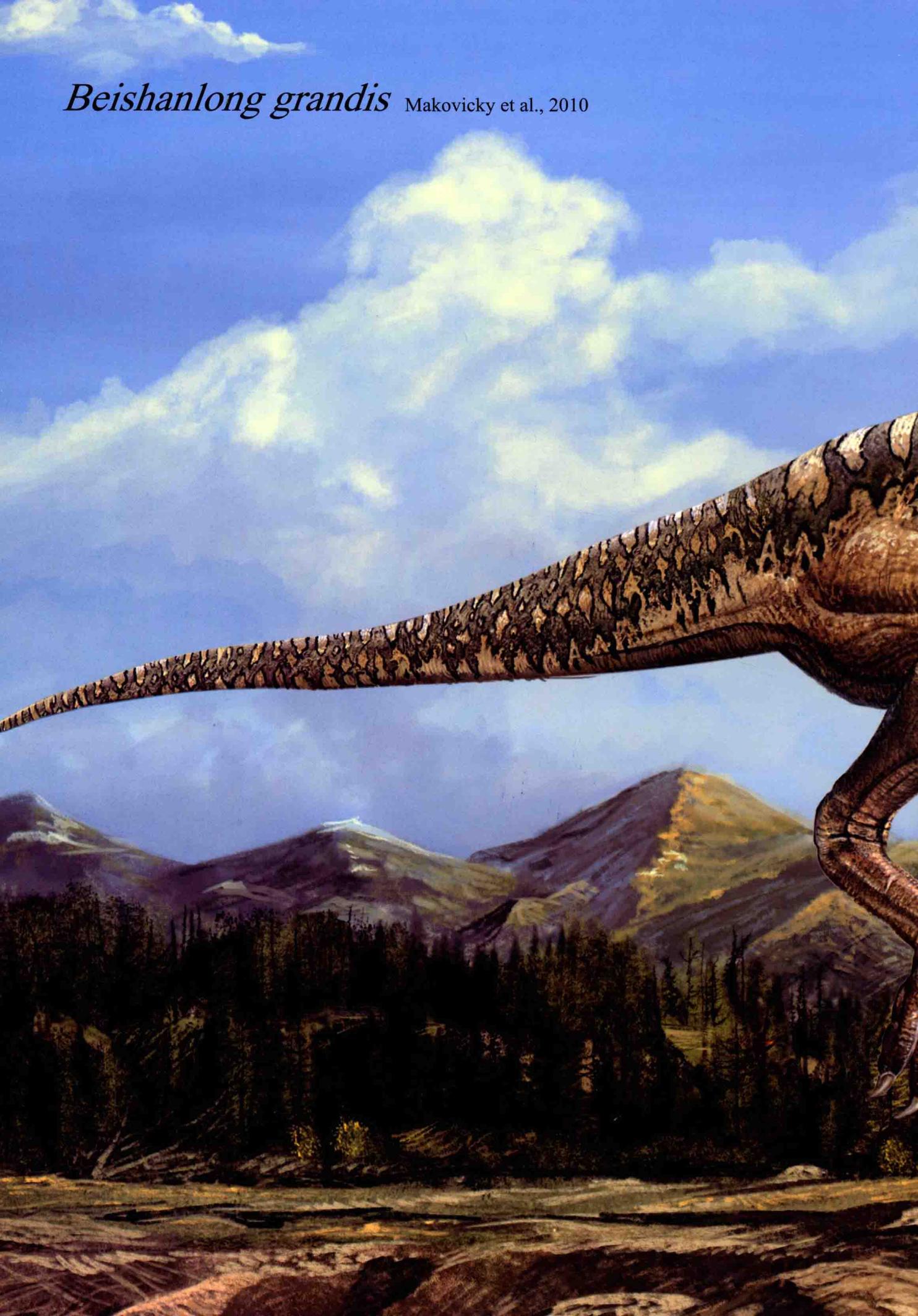
Age: the Early Cretaceous, approximately 100 million years ago.

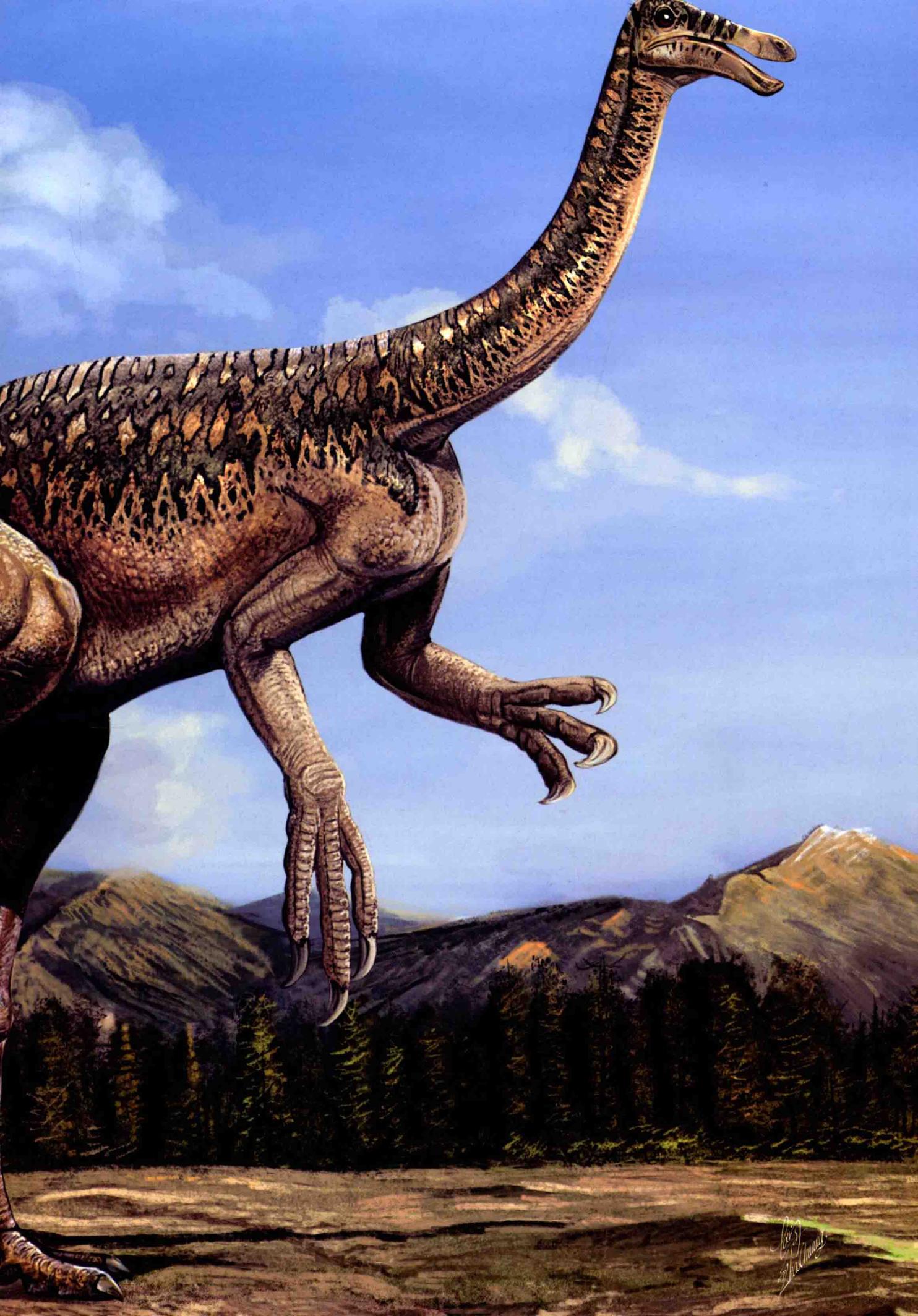
Locality: Gansu, China

First Described by: Peter J. Makovicky, Daqing Li, Keqin Gao etc

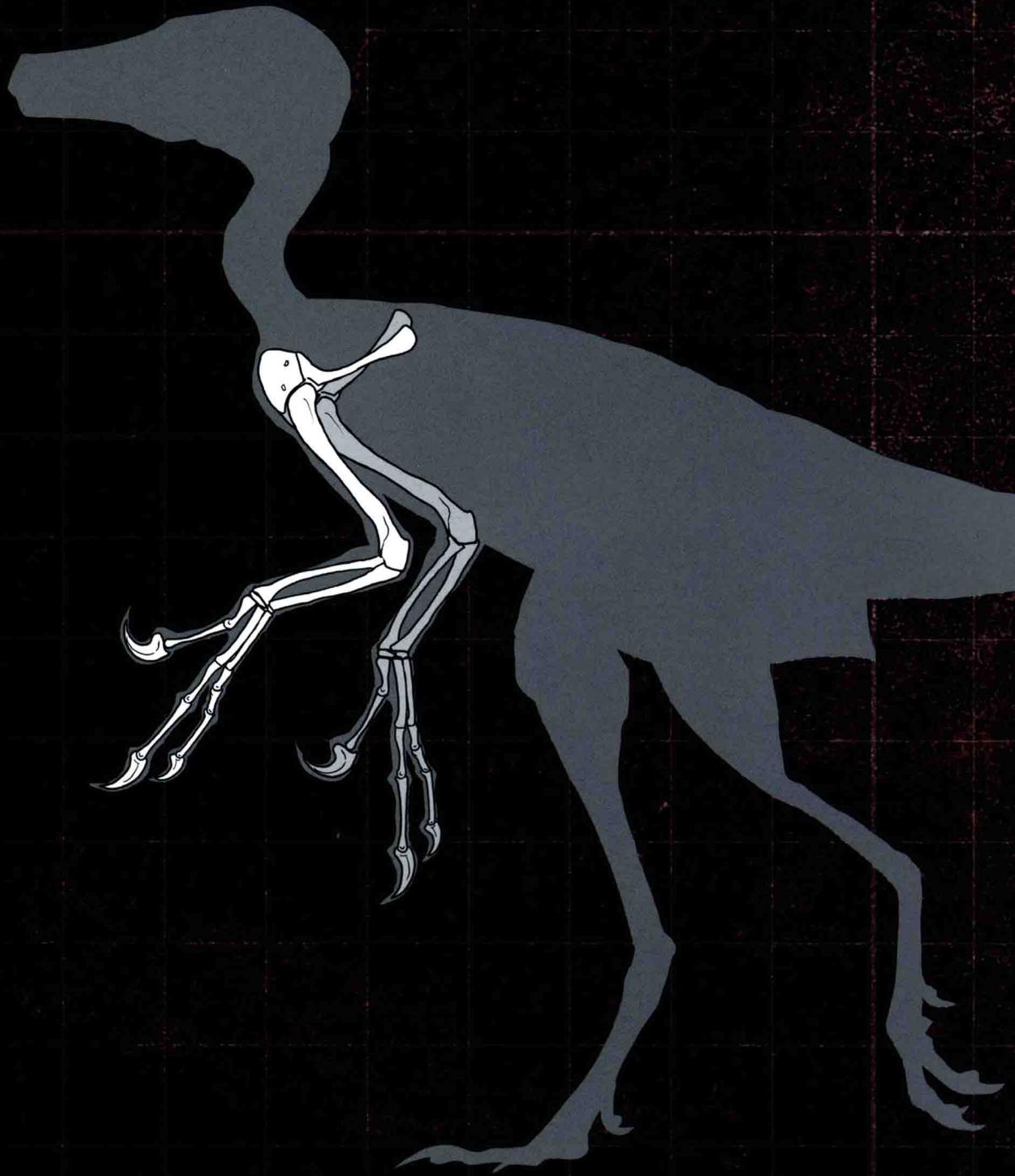


Beishanlong grandis Makovicky et al., 2010





Yixianosaurus longimanus Xu et Wang, 2003



蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

中文名称：长掌义县龙

学名：*Yixianosaurus longimanus* Xu et Wang, 2003

释义：属名意为“来自义县的蜥蜴”。

种名指其较长的掌骨。

大小：体长约 2m

食性：肉食

生存年代：早白垩世，距今约 1.22 亿年

化石产地：中国辽宁

命名者：徐星，汪筱林

Taxonomic Name: *Yixianosaurus longimanus* Xu et Wang, 2003

Etymology: The generic name means "Yixian lizard".

The specific name means "with a long hand".

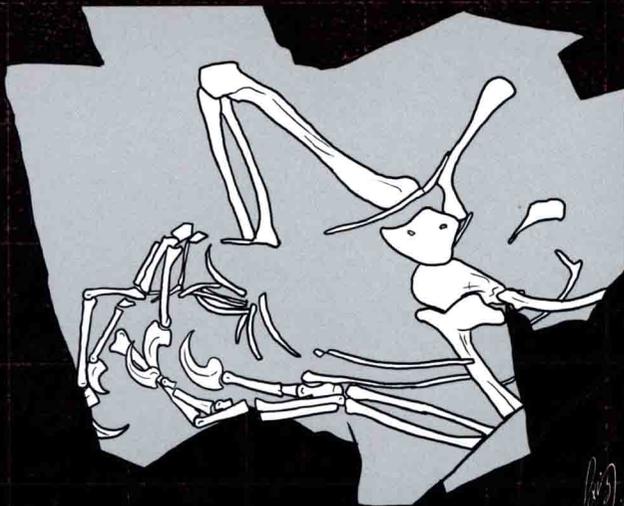
Body Size: around 2 meters long

Diet: Carnivore

Age: the Early Cretaceous, approximately 122 million years ago

Locality: Liaoning, China

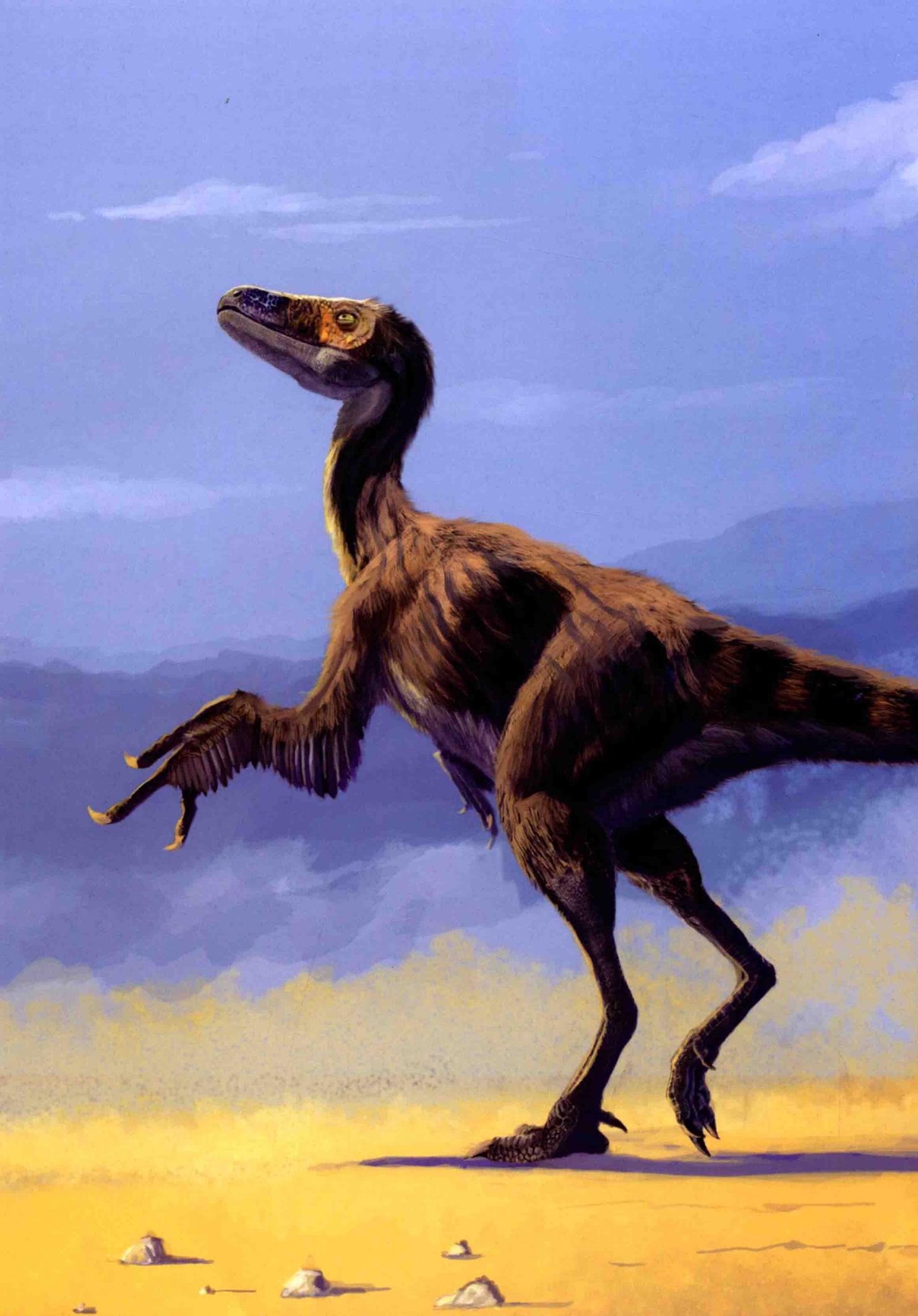
First Described by: Xing Xu, Xiaolin Wang



10cm



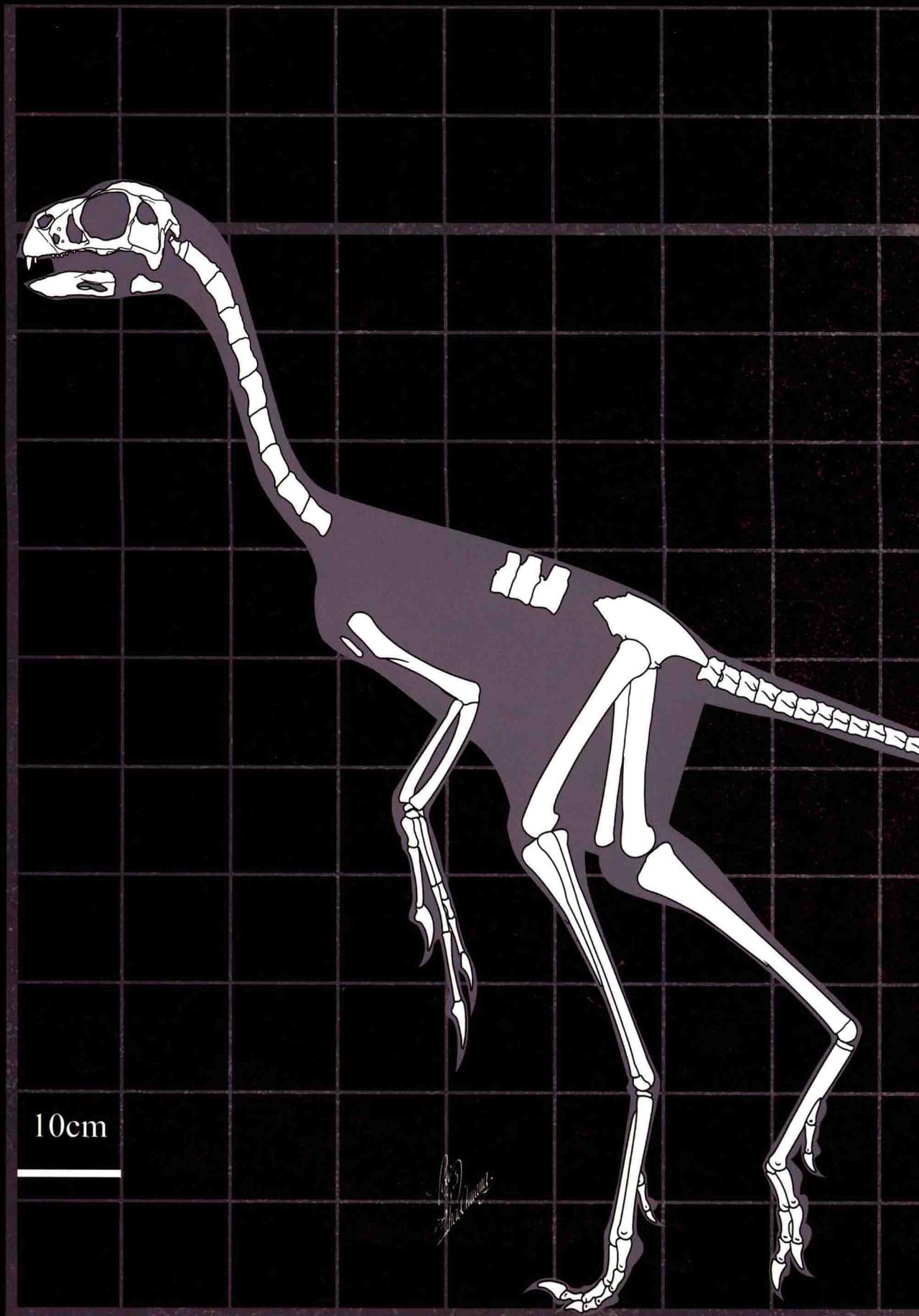
Xu et Wang, 2003



Yixianosaurus longimanus Xu et Wang, 2003



Yixianosaurus longimanus
Xu et Wang, 2003



蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

偷蛋龙下目 Oviraptorosauria

Incisivosaurus gauthieri Xu et al., 2002

Incisivosaurus gauthieri Xu et al., 2002

中文名称：戈氏切齿龙

学名：*Incisivosaurus gauthieri* Xu et al., 2002

释义：属名意为“门牙蜥蜴”。

种名献给嘉克斯·戈斯特（Jacques Gauthier）。

大小：体长约 1.2m

食性：肉食

生存年代：早白垩世，距今约 1.25 亿年

化石产地：中国辽宁

命名者：徐星，程延年，汪筱林等

Taxonomic Name: *Incisivosaurus gauthieri* Xu et al., 2002

Etymology: The generic name means "incisor lizard".

The specific name honors Dr. Jacques Gauthier.

Body Size: around 1.2 meters long

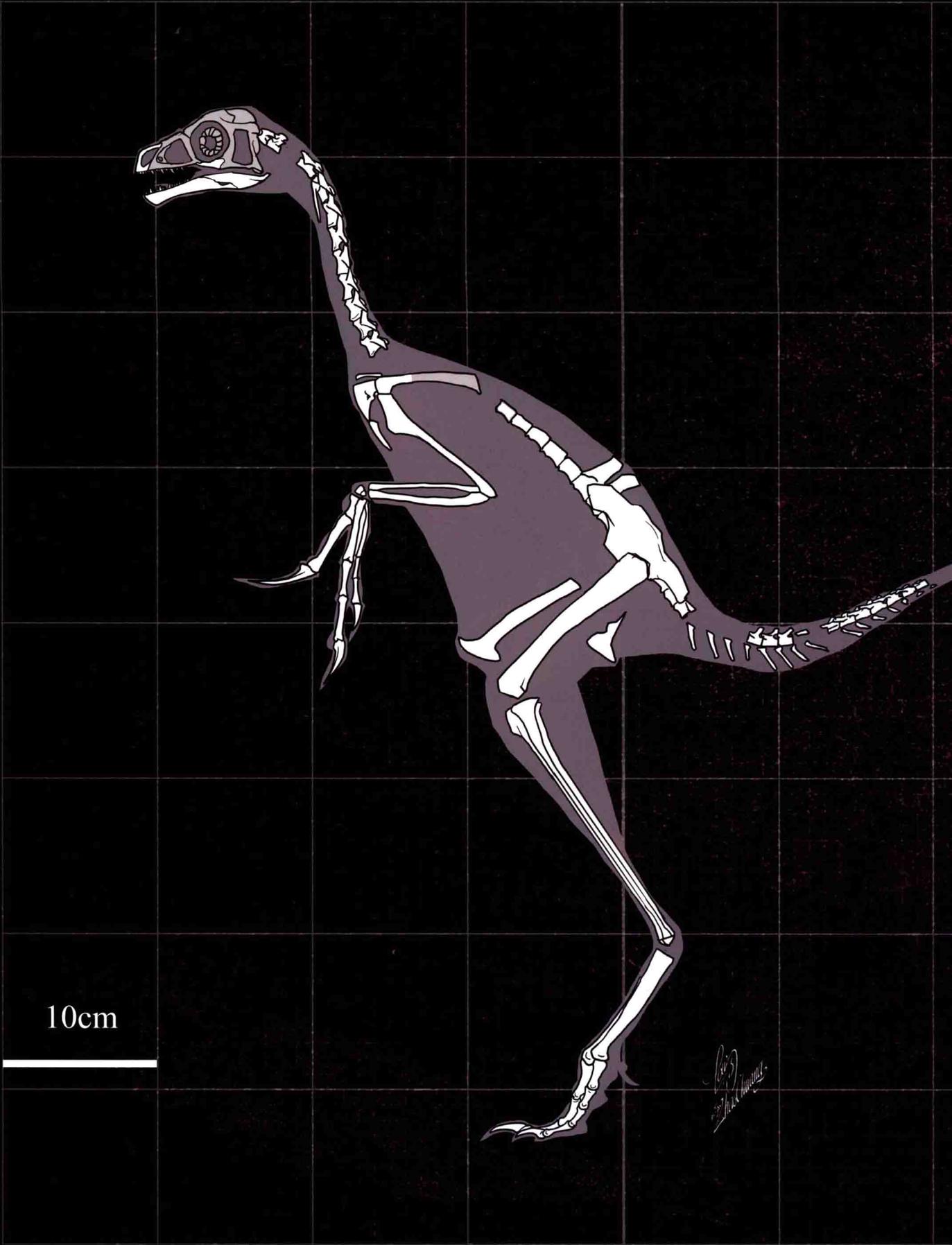
Diet: Carnivore

Age: the Early Cretaceous, approximately 125 million years ago

Locality: Liaoning, China

First Described by: Xing Xu, Yannian Cheng, Xiaolin Wang etc





10cm

蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

偷蛋龙下目 Oviraptorosauria

Protarchaeopteryx robusta Ji et Ji, 1997

Protarchaeopteryx robusta Ji et Ji, 1997

中文名称：强壮原始祖鸟

学名：*Protarchaeopteryx robusta* Ji et Ji, 1997

释义：属名意为“原始的”。

种名意为“强健的”。

大小：体长约 1m

食性：植食或杂食

生存年代：早白垩世，距今约 1.25 亿年

化石产地：中国辽宁

命名者：季强，姬书安

Taxonomic Name: *Protarchaeopteryx robusta* Ji et Ji, 1997

Etymology: The generic name means "primary".

The specific name means "strong".

Body Size: around 1 meter long

Diet: Herbivore or Omnivore

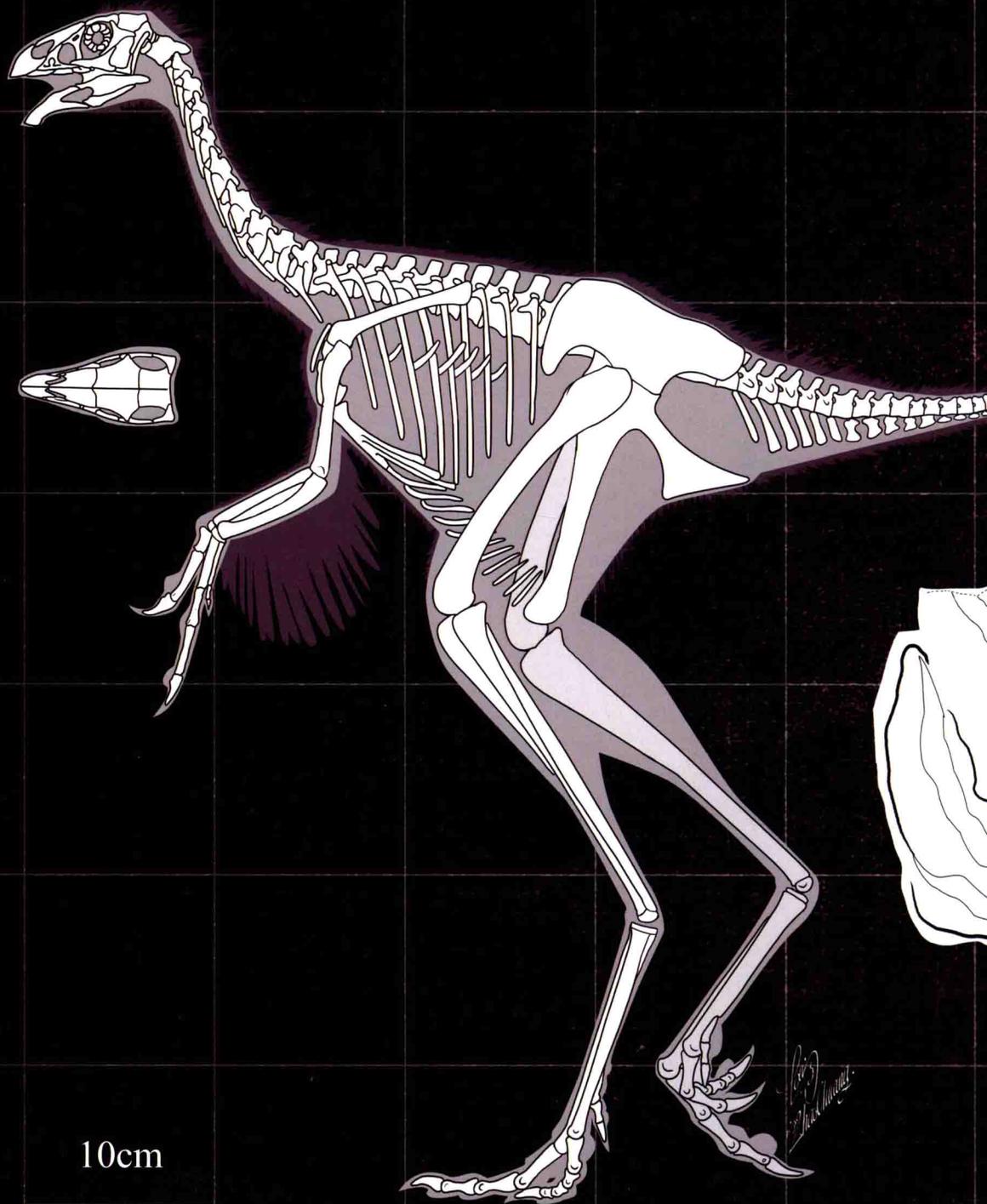
Age: the Early Cretaceous, approximately 125 million years ago

Locality: Liaoning, China

First Described by: Qiang Ji, Shu'an Ji



Art by
The Paleontologist



10cm

蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

偷蛋龙下目 Oviraptorosauria



中文名称：邹氏尾羽龙

学名：*Caudipteryx zoui* Ji et al., 1998

释义：属名意为“尾巴羽毛”。

种名献给原副总理邹家华。

大小：体长约 0.7m

食性：杂食

生存年代：早白垩世

化石产地：中国辽宁

命名者：季强，Philip J. Currie, Mark A. Norell 等

Taxonomic Name: *Caudipteryx zoui* Ji et al., 1998

Etymology: The generic name means "tail feather".

The specific name is presented to Vice Premier Zou Jiahua.

Body Size: around 0.7 meters long

Diet: Omnivore

Age: the Early Cretaceous

Locality: Liaoning, China

First Described by: Qiang Ji, Philip J. Currie, Mark A. Norell etc

Caudipteryx zoui Ji et al., 1998

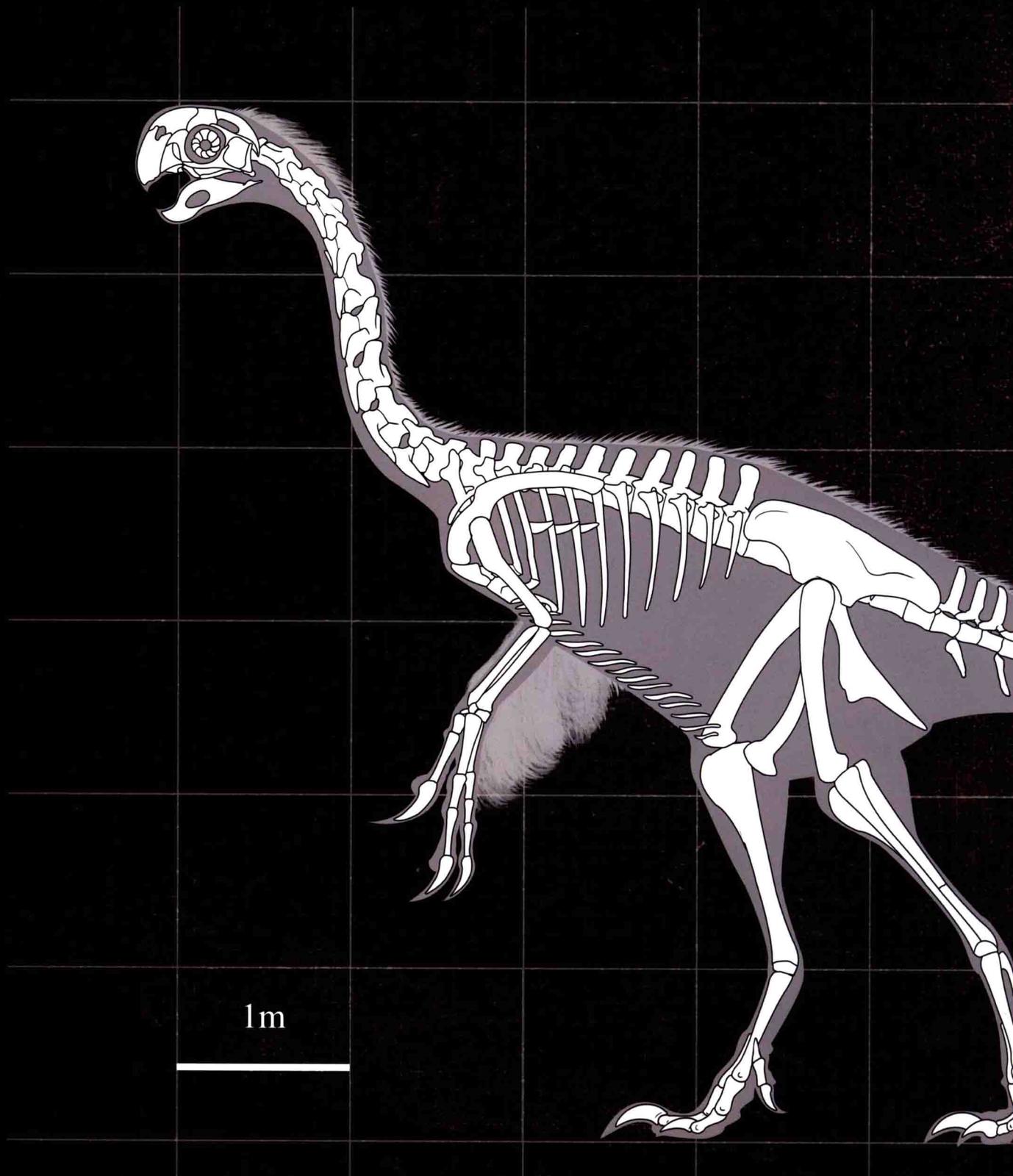


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Michael Minter

Caudipteryx zoui Ji et al., 1998



Gigantoraptor erlianensis Xu et al., 2007



蜥臀目 Saurischia

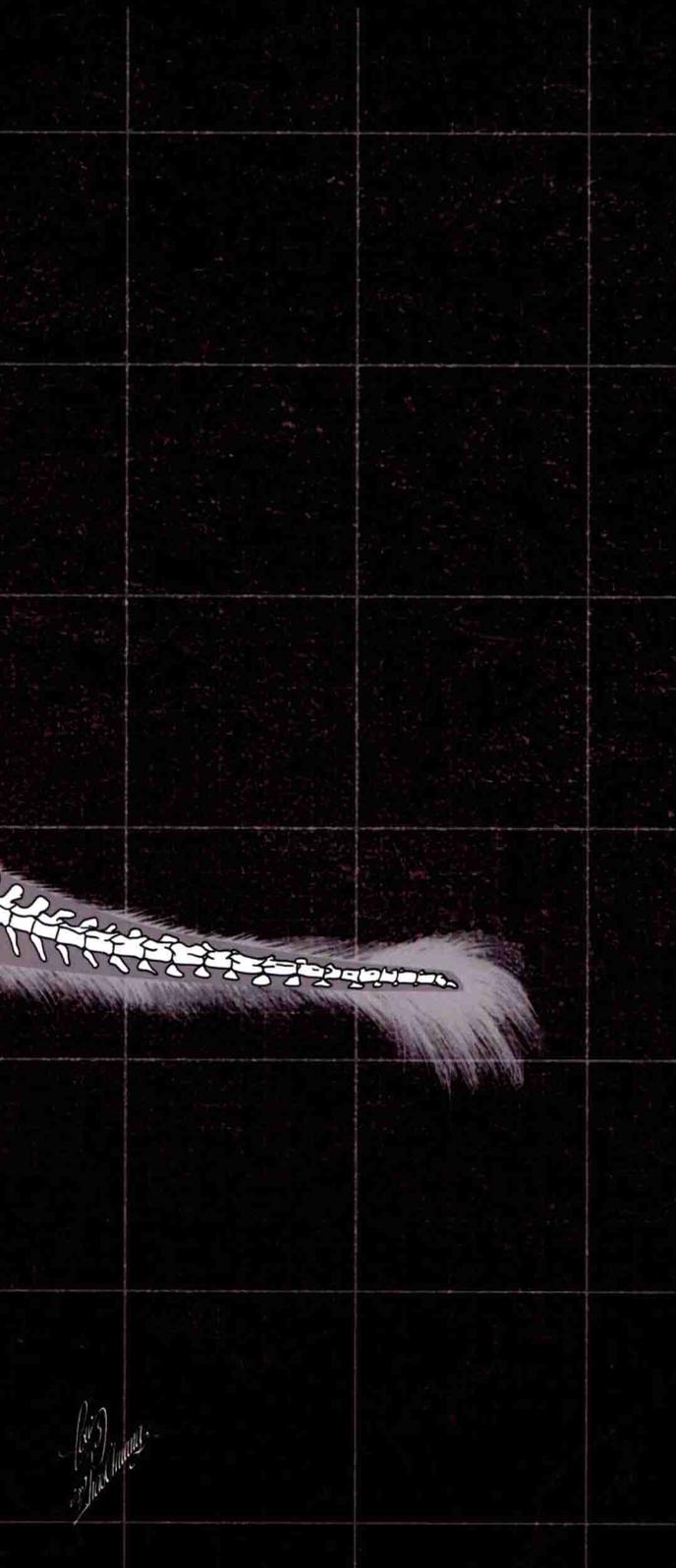
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

偷蛋龙下目 Oviraptorosauria



中文名称：二连巨盗龙

学名：*Gigantoraptor erlianensis* Xu et al., 2007

释义：属名意为“偷蛋的贼”。

种名指化石发现地内蒙古二连浩特。

大小：体长约 8m, 体重约 1400kg

食性：肉食

生存年代：晚白垩世，距今约 8500 万年

化石产地：中国内蒙古

命名者：徐星等

Taxonomic Name: *Gigantoraptor erlianensis* Xu et al., 2007

Etymology: The generic name means "gigantic thief".

The specific name refers to the Erlian Basin of Inner Mongolia where the fossil remains were found.

Body Size: around 8 meters long, with an estimated weight of 1400 kg

Diet: Carnivore

Age: the Late Cretaceous, approximately 85 million years ago

Locality: Inner Mongolia, China

First Described by: Xing Xu et al.

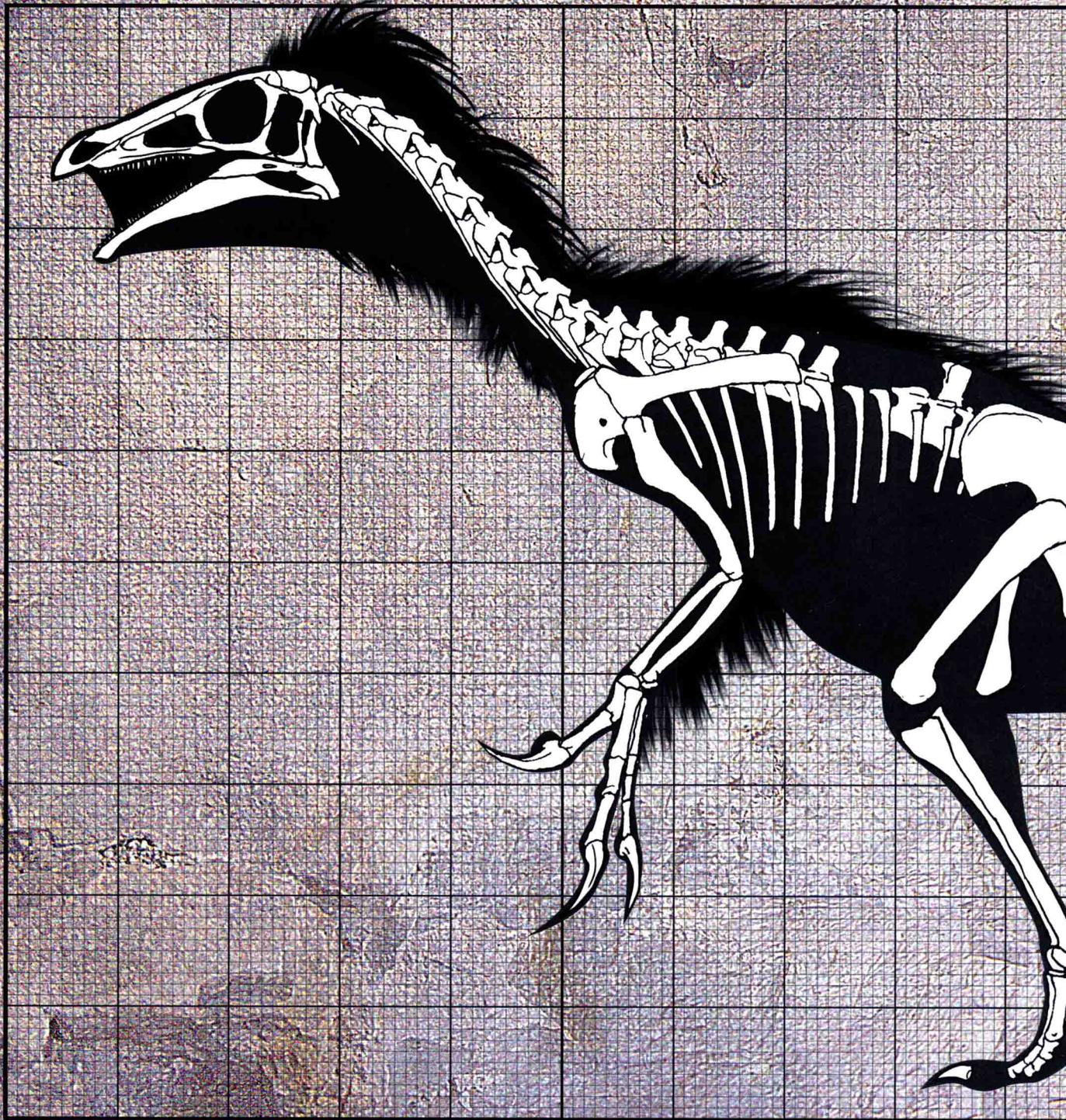


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Gigantoraptor erlianensis Xu et al., 2007



Beipiaosaurus inexpectus Xu, Tang et Wang, 1999



蜥臀目 Saurischia

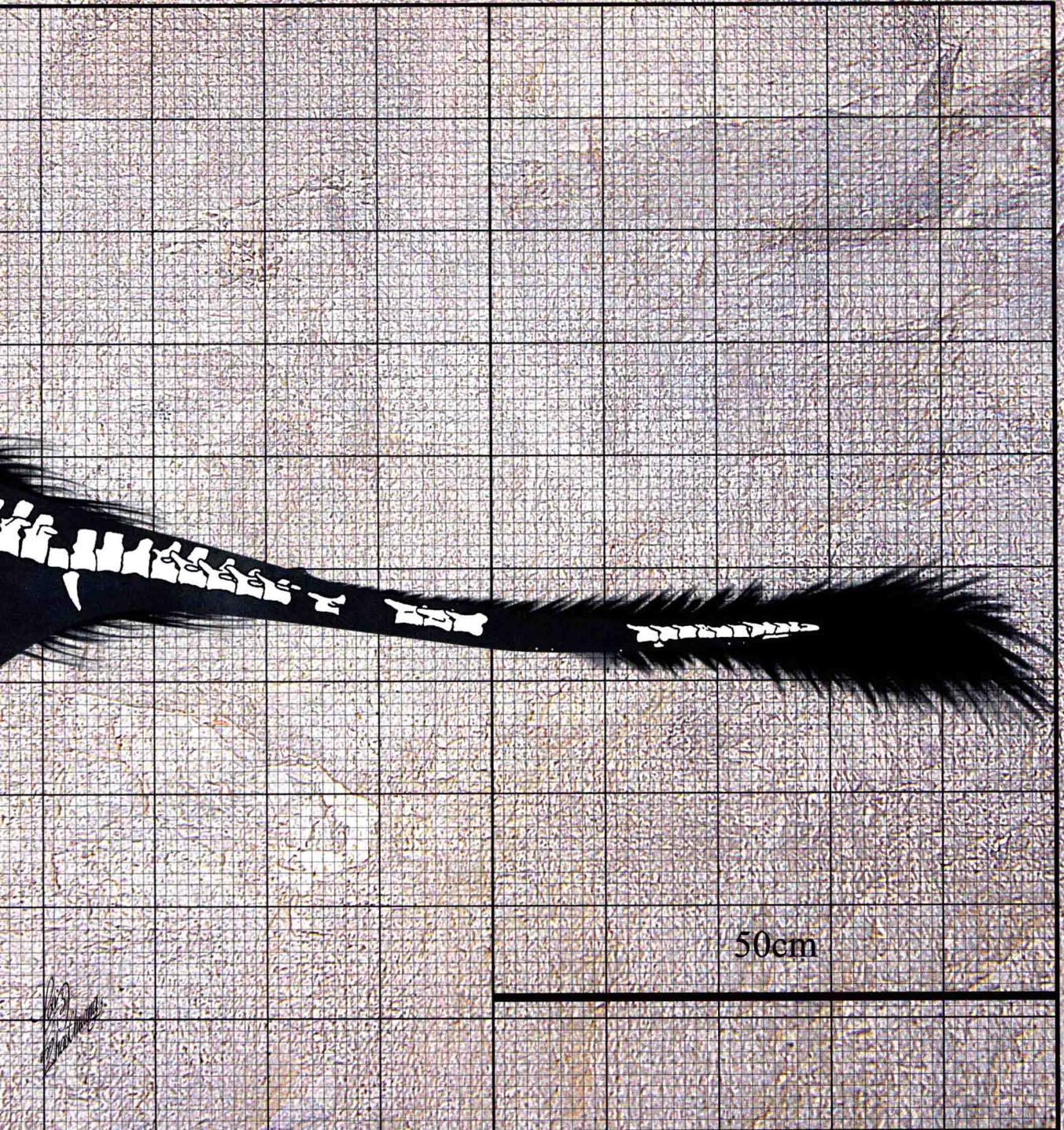
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

镰刀龙超科 Therizinosauroidea



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Beipiaosaurus inexpectus Xu, Tang et Wang, 1999

中文名称：意外北票龙

学名：*Beipiaosaurus inexpectus* Xu, Tang et Wang, 1999

释义：属名意为“来自北票市的蜥蜴”。

种名指其令人意外的特征。

大小：体长约 2.2m, 体重约 85kg

食性：肉食

生存年代：早白垩世，距今约 1.25 亿年

化石产地：中国辽宁

命名者：徐星，唐治路，汪筱林

Taxonomic Name: *Beipiaosaurus inexpectus* Xu, Tang et Wang, 1999

Etymology: The generic name means "Beipiao lizard".

The specific name means "unexpected", refers to the surprising features in this animal.

Body Size: around 2.2 meters long, with an estimated weight of 85 kg

Diet: Carnivore

Age: the Early Cretaceous, approximately 125 million years ago

Locality: Liaoning, China

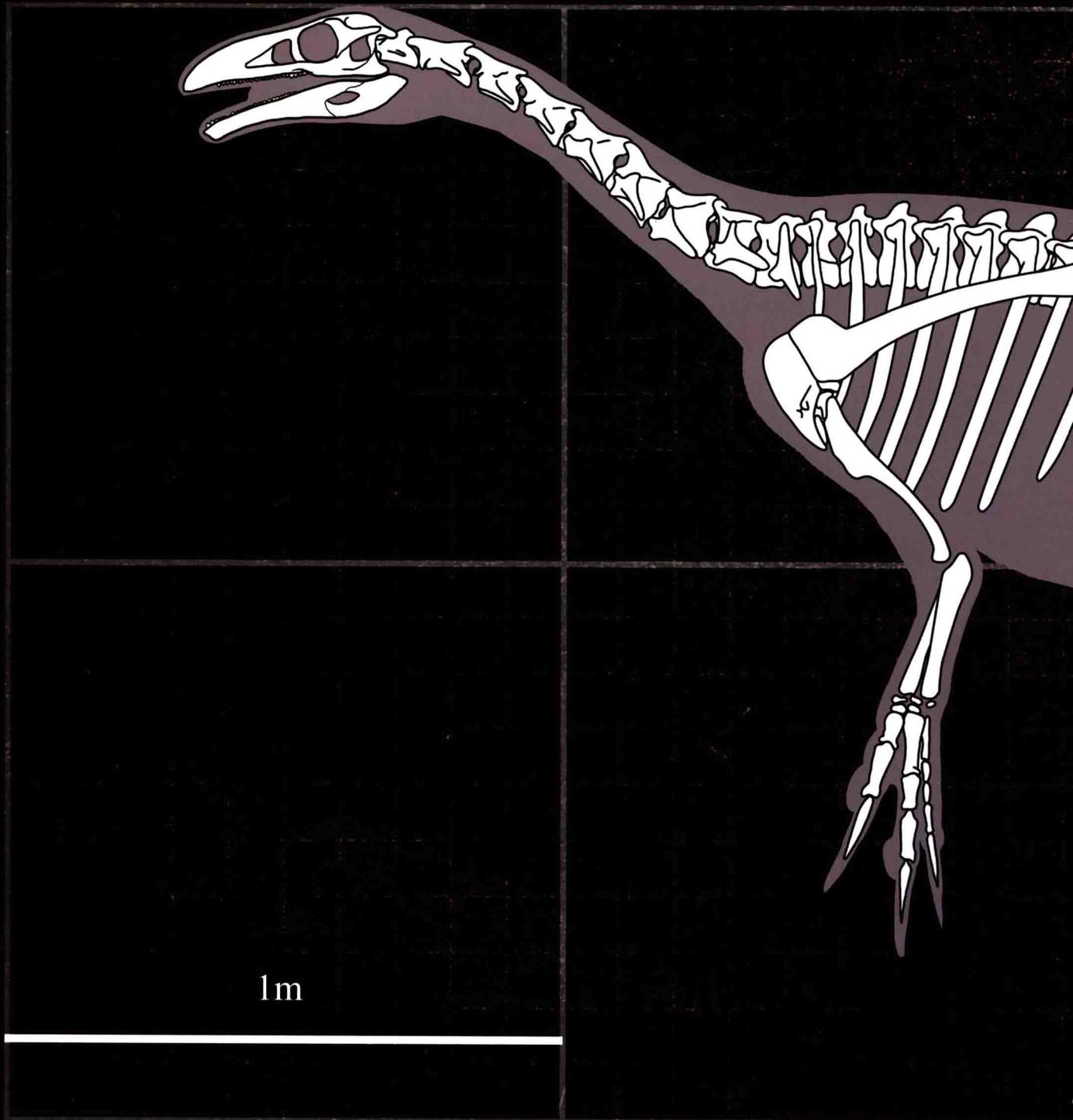
First Described by: Xing Xu, Zhilu Tang, Xiaolin Wang





*Robyn
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Alxasaurus elesitaiensis Russell et Dong, 1993



蜥臀目 Saurischia

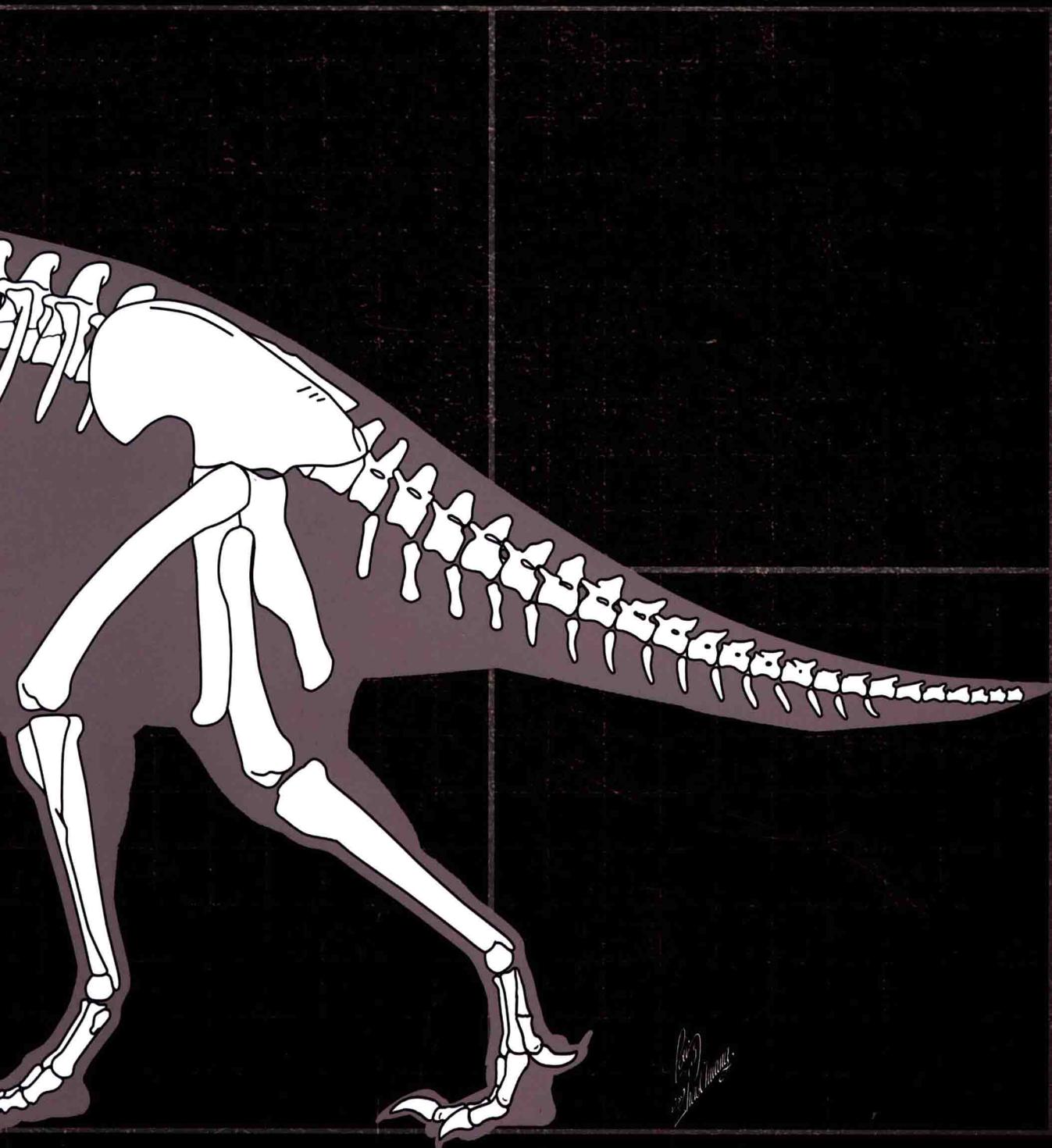
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

镰刀龙超科 Therizinosauroidea



Alxasaurus elesitaiensis Russell et Dong, 1993



中文名称：额勒斯台阿拉善龙

学名：*Alxasaurus elesitaiensis* Russell et Dong, 1993

释义：属名意为“来自阿拉善的蜥蜴”。

种名指其化石产地额勒斯台。

大小：体长约 3.7m

食性：杂食

生存年代：早白垩世，距今 1.12 亿年 ~1 亿年

化石产地：中国内蒙古

命名者：Dale Russell, 董枝明

Taxonomic Name: *Alxasaurus elesitaiensis* Russell et Dong, 1993

Etymology: The generic name means "Alxa Desert lizard".

The specific name is named after Elesitai, a village found in this region, near which the fossil remains of *Alxasaurus* were located.

Body Size: around 3.7 meters long

Diet: Omnivore

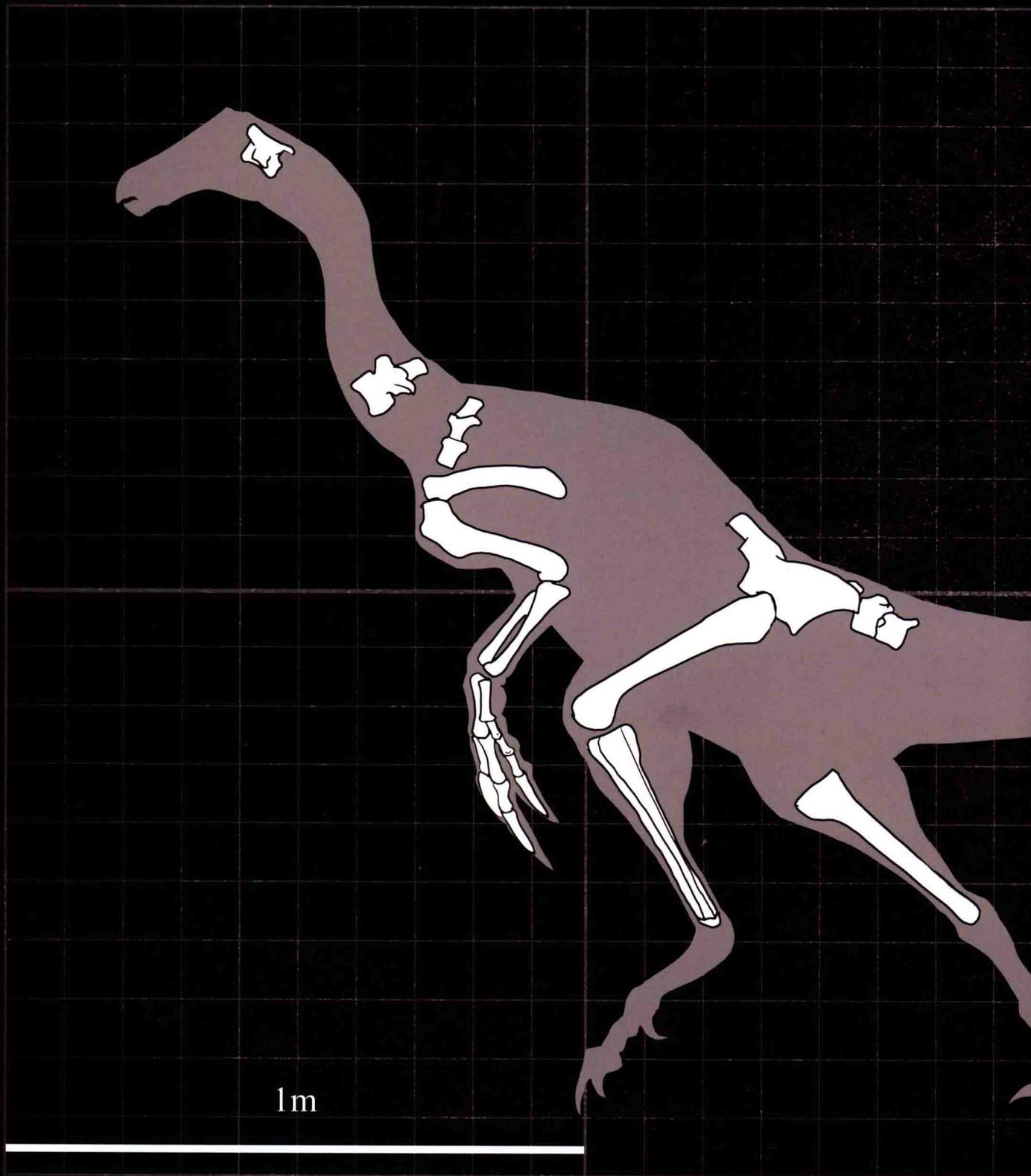
Age: the Early Cretaceous, approximately 112 to 100 million years ago

Locality: Inner Mongolia, China

First Described by: Dale Russell, Zhiming Dong



Erliansaurus bellamanus Xu et al, 2002



蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

镰刀龙超科 Therizinosauroidea

中文名称：美掌二连龙

学名：*Erliansaurus bellamanus* Xu et al, 2002

释义：属名意为“来自二连浩特的蜥蜴”。

种名指其保存精美的前肢。

大小：体长约 3m

食性：杂食

生存年代：晚白垩世，距今 7000 万年 ~6500 万年

化石产地：中国内蒙古

命名者：徐星，张晓虹，Paul Sereno 等

Taxonomic Name: *Erliansaurus bellamanus* Xu et al, 2002

Etymology: The generic name means "Erlian lizard".

The specific name is in reference to the exquisite preservation of the forelimb.

Body Size: around 3 meters long

Diet: Omnivore

Age: the Late Cretaceous, approximately 70 to 65 million years ago

Locality: Inner Mongolia, China

First Described by: Xing Xu, Xiaohong Zhang, Paul Sereno etc

Erliansaurus bellamanus
Xu et al, 2002

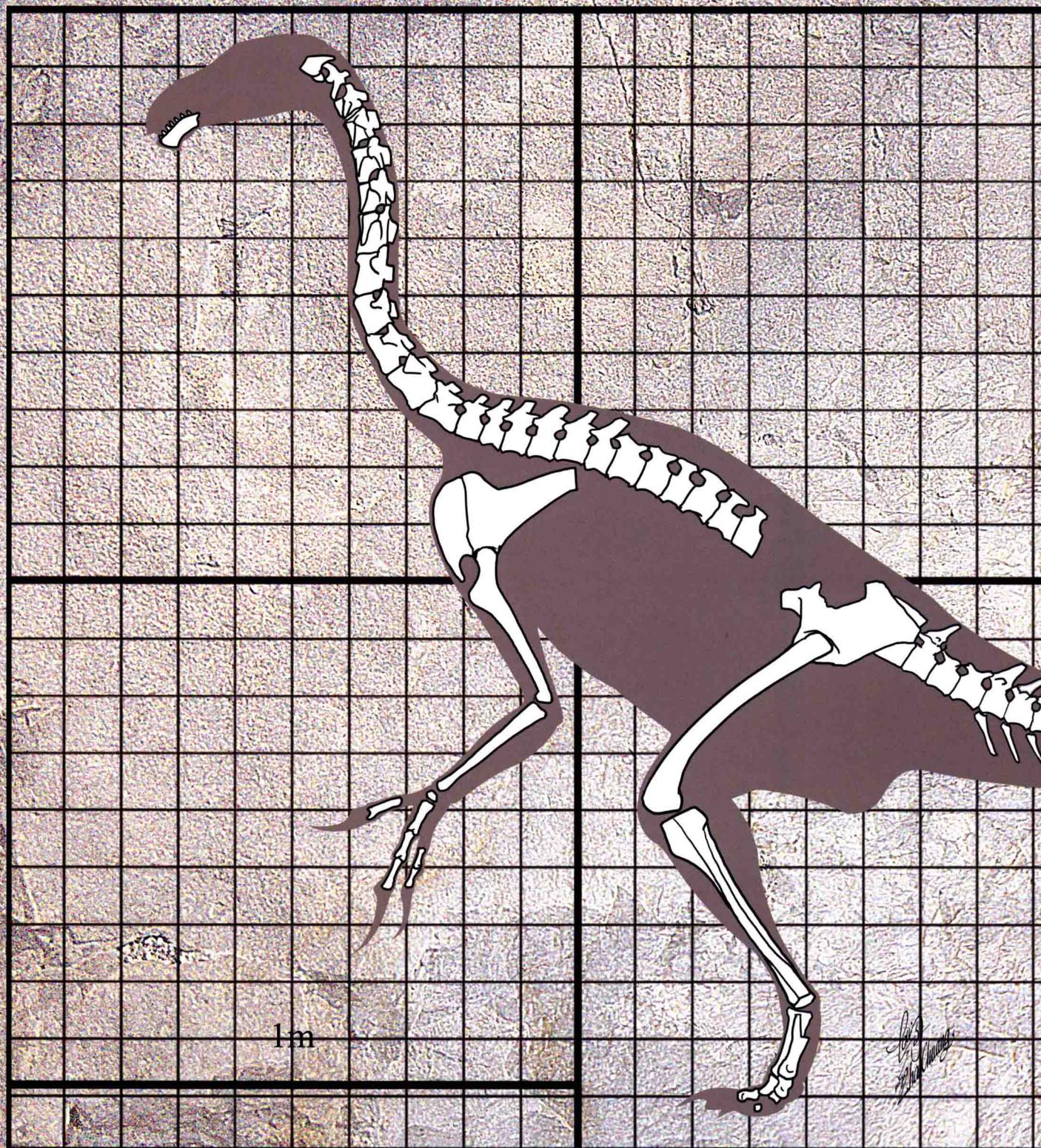


Erliansaurus bellamanus Xu et al, 2002



© 2002
Xu et al.

Neimongosaurus yangi Zhang et al., 2001



蜥臀目 Saurischia

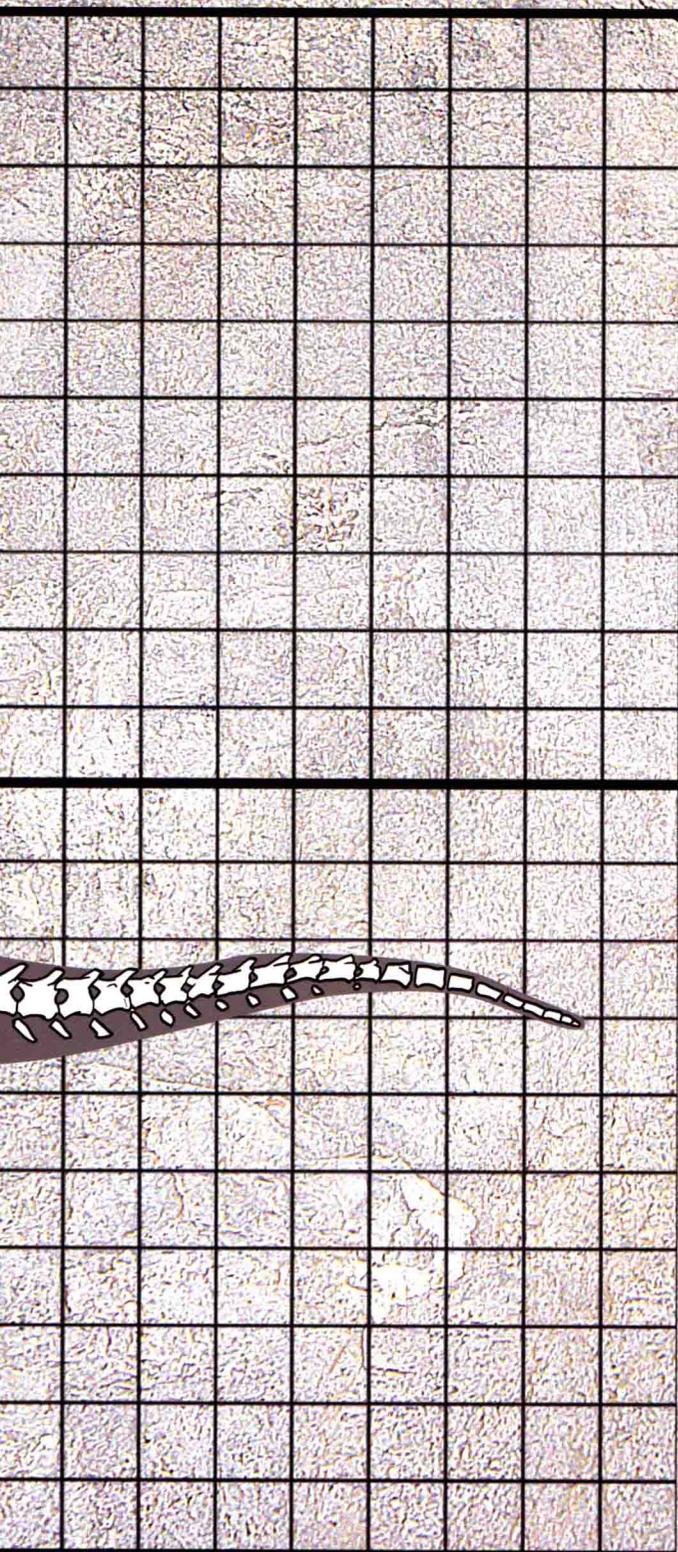
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

镰刀龙超科 Therizinosauroidea



中文名称：杨氏内蒙古龙

学名：*Neimongosaurus yangi* Zhang et al., 2001

释义：属名意为“来自内蒙古的蜥蜴”。
种名献给中国古生物学的奠基人杨钟健。

大小：体长约 2.3m

食性：植食

生存年代：晚白垩世，距今 7200 万年~6800 万年

化石产地：中国内蒙古

命名者：张晓虹，徐星，Paul Sereno 等

Taxonomic Name: *Neimongosaurus yangi* Zhang et al., 2001

Etymology: The generic name is derived from Inner Mongolia.
The specific name honours Yang Zhongjian.

Body Size: around 2.3 meters long

Diet: Herbivore

Age: the Late Cretaceous, approximately 72 to 68 million years ago

Locality: Inner Mongolia, China

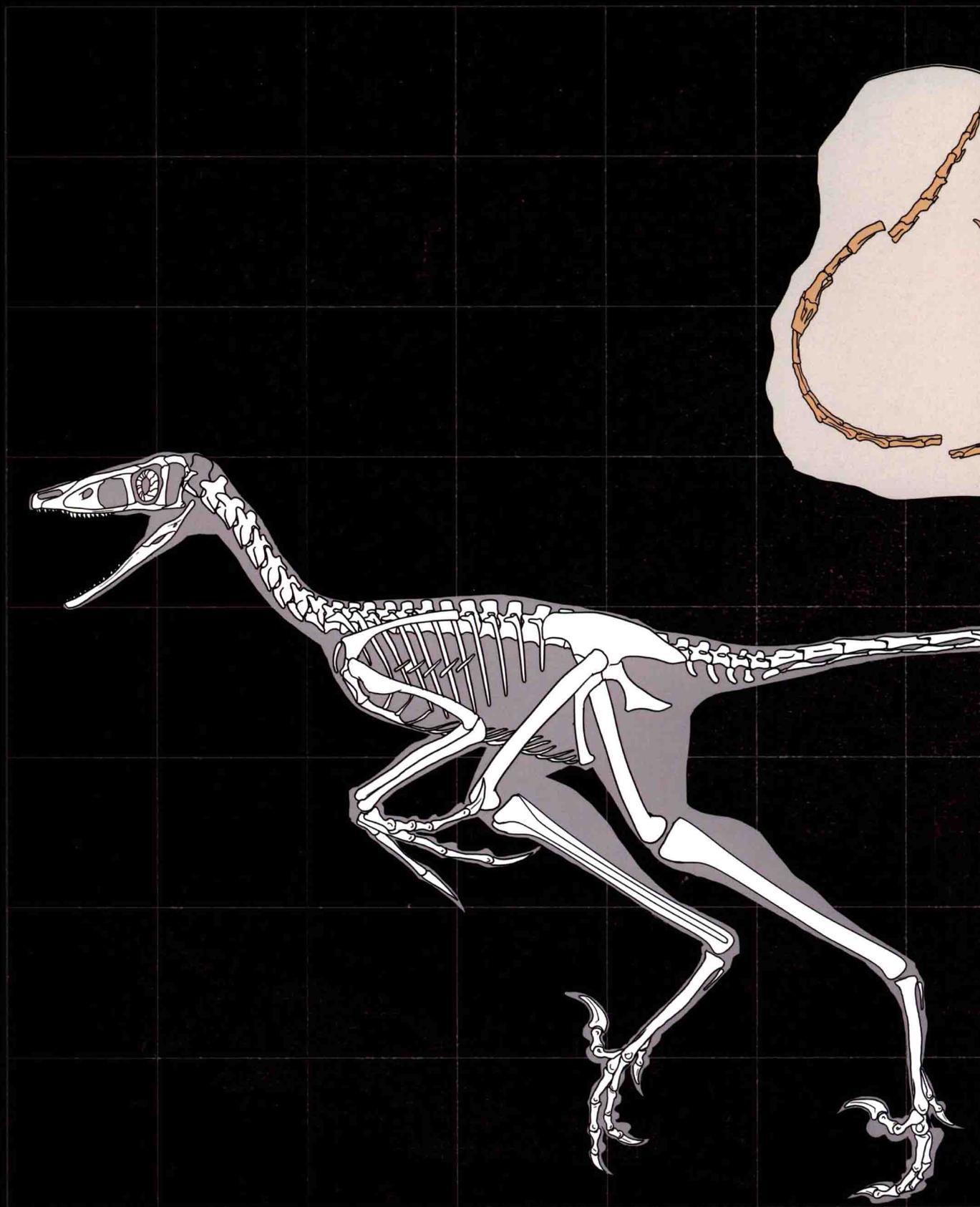
First Described by: Xiaohong Zhang, Xing Xu, Paul Sereno etc



Neimongosaurus yangi Zhang et al., 2001



Sinuisonassus magnodens Xu et Wang, 2004





Sinunosasus magnodens Xu et Wang, 2004

中文名称：巨齿曲鼻龙

学名：*Sinunosasus magnodens* Xu et Wang, 2004

释义：属名指从侧面看，其鼻孔内部呈正弦曲线型，所以叫“曲鼻龙”。
种名指其巨大的牙齿。

大小：不详

食性：肉食

生存年代：早白垩世

化石产地：中国辽宁

命名者：徐星，汪筱林

Taxonomic Name: *Sinunosasus magnodens* Xu et Wang, 2004

Etymology: The generic name refers to the sinusoid form, in lateral view, of the nasals.
The specific name means "big-toothed".

Body Size: Unknown

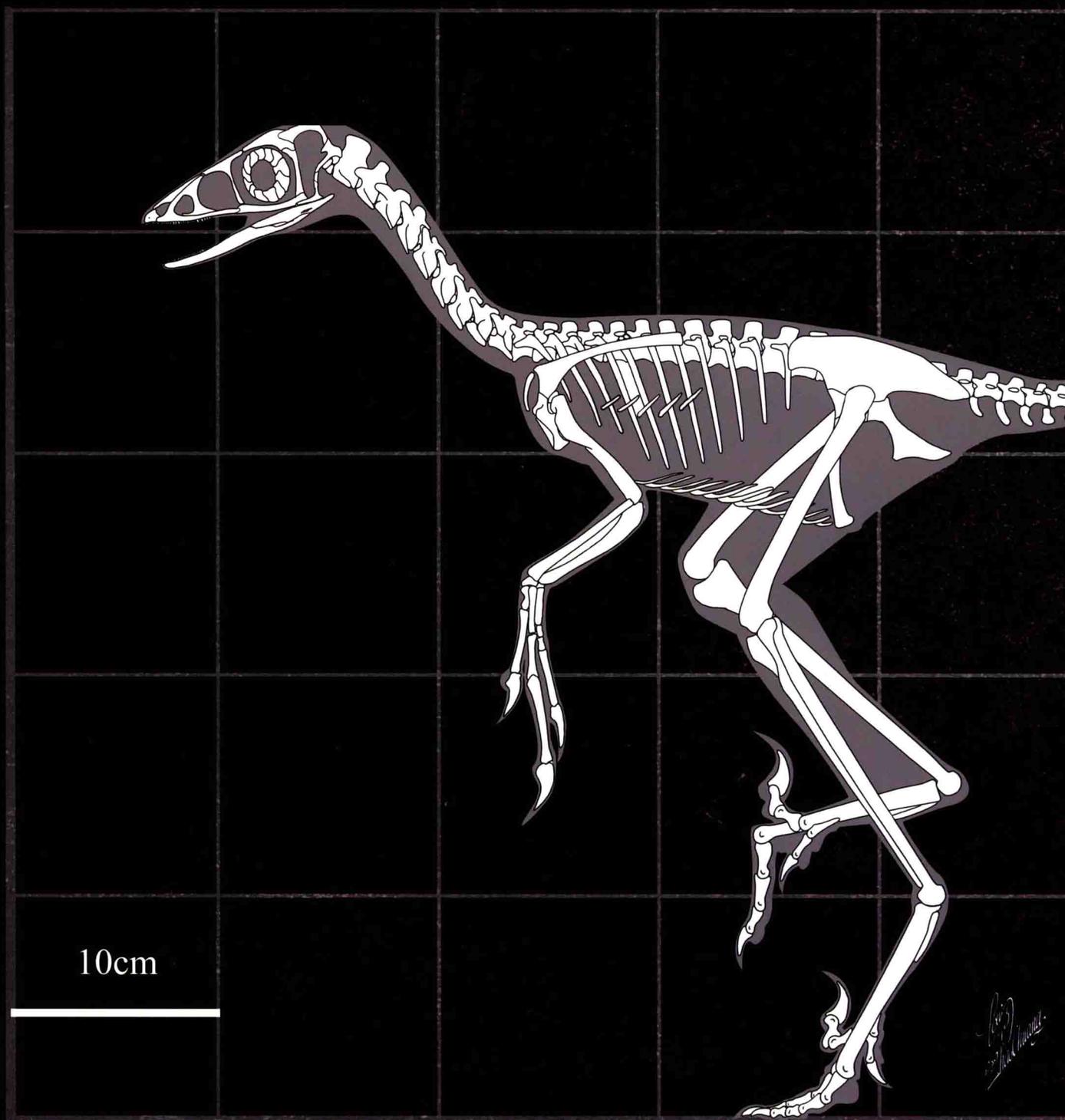
Diet: Carnivore

Age: the Early Cretaceous

Locality: Liaoning, China

First Described by: Xing Xu, Xiaolin Wang

Mei long Xu et Norell, 2004



蜥臀目 Saurischia

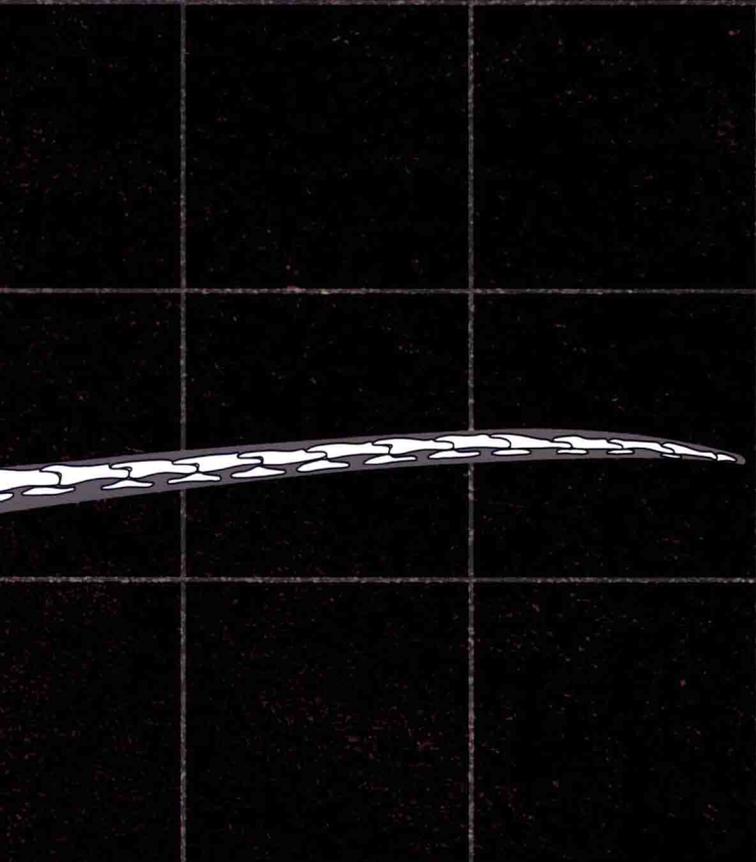
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

恐爪龙下目 Deinonychosauria



中文名称: 寐龙

学名: *Mei long* Xu et Norell, 2004

释义: 属名意为“甜睡”。

种名来自汉语拼音的“龙”，因标本保存着甜睡的姿态而得名寐龙。

大小: 体长 0.6~1m

食性: 肉食

生存年代: 早白垩世

化石产地: 中国辽宁

命名者: 徐星, Mark A. Norell

Taxonomic Name: *Mei long* Xu et Norell, 2004

Etymology: The generic name means "sleeping dragon".

The specific name is derived from the Chinese Pinyin "Long", which means dragon.

Body Size: around 0.6 to 1 meter long

Diet: Carnivore

Age: the Early Cretaceous

Locality: Liaoning, China

First Described by: Xing Xu, Mark A. Norell

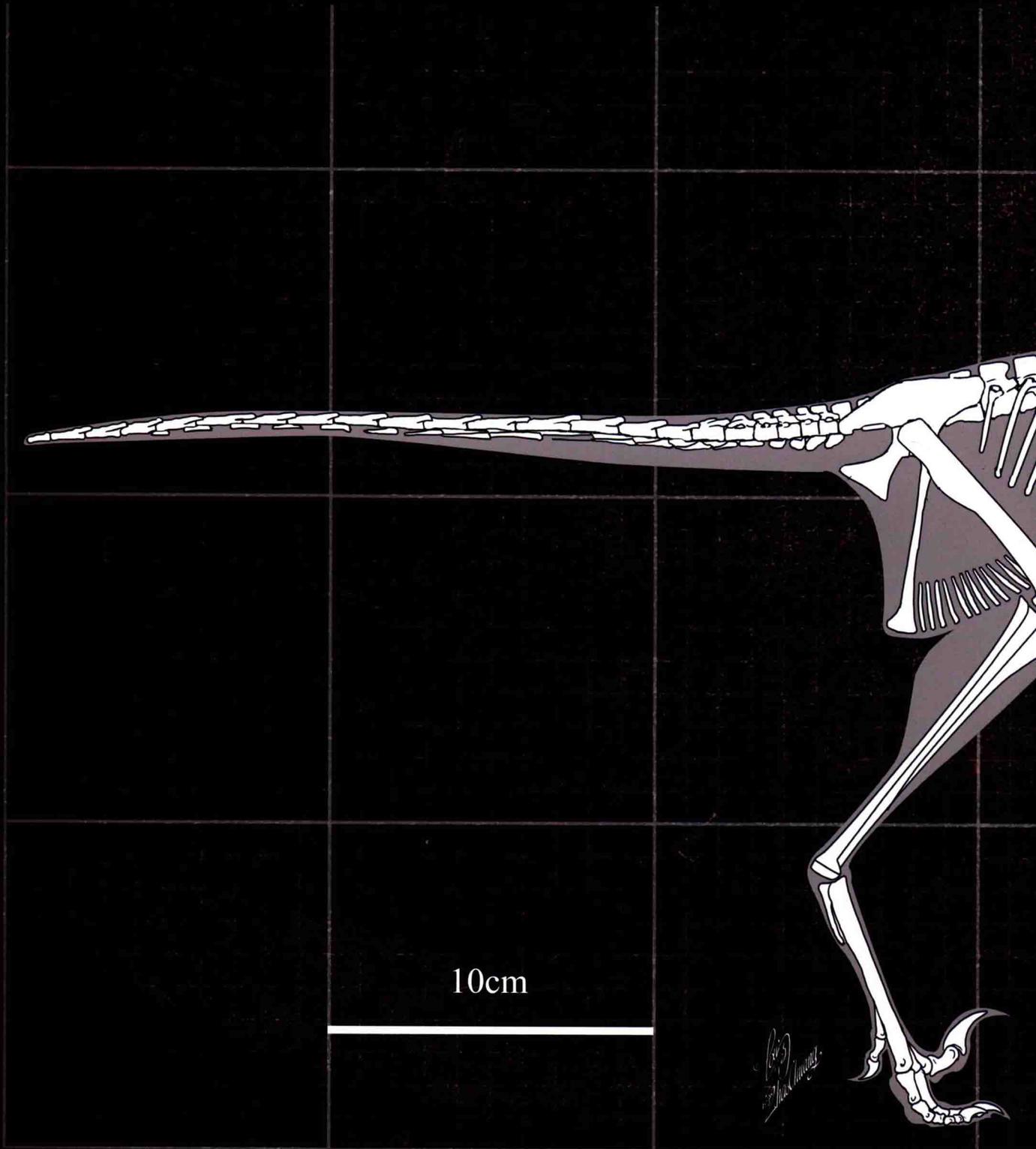


Mei long Xu et Norell, 2004



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Jinfengopteryx elegans Ji et al., 2005



蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

恐爪龙下目 Deinonychosauria



中文名称：华美金凤龙

学名：*Jinfengopteryx elegans* Ji et al., 2005

释义：属名来自中国神话中的金凤凰。

种名意为“优美的，漂亮的”。

大小：体长约 0.55m

食性：肉食

生存年代：早白垩世

化石产地：中国河北

命名者：季强，姬书安，吕君昌等

Taxonomic Name: *Jinfengopteryx elegans* Ji et al., 2005

Etymology: The generic name means "Golden phoenix bird".

The specific name means "elegant and beautiful".

Body Size: around 0.55 meters long

Diet: Carnivore

Age: the Early Cretaceous

Locality: Hebei, China

First Described by: Qiang Ji, Shu'an Ji, Junchang Lü etc

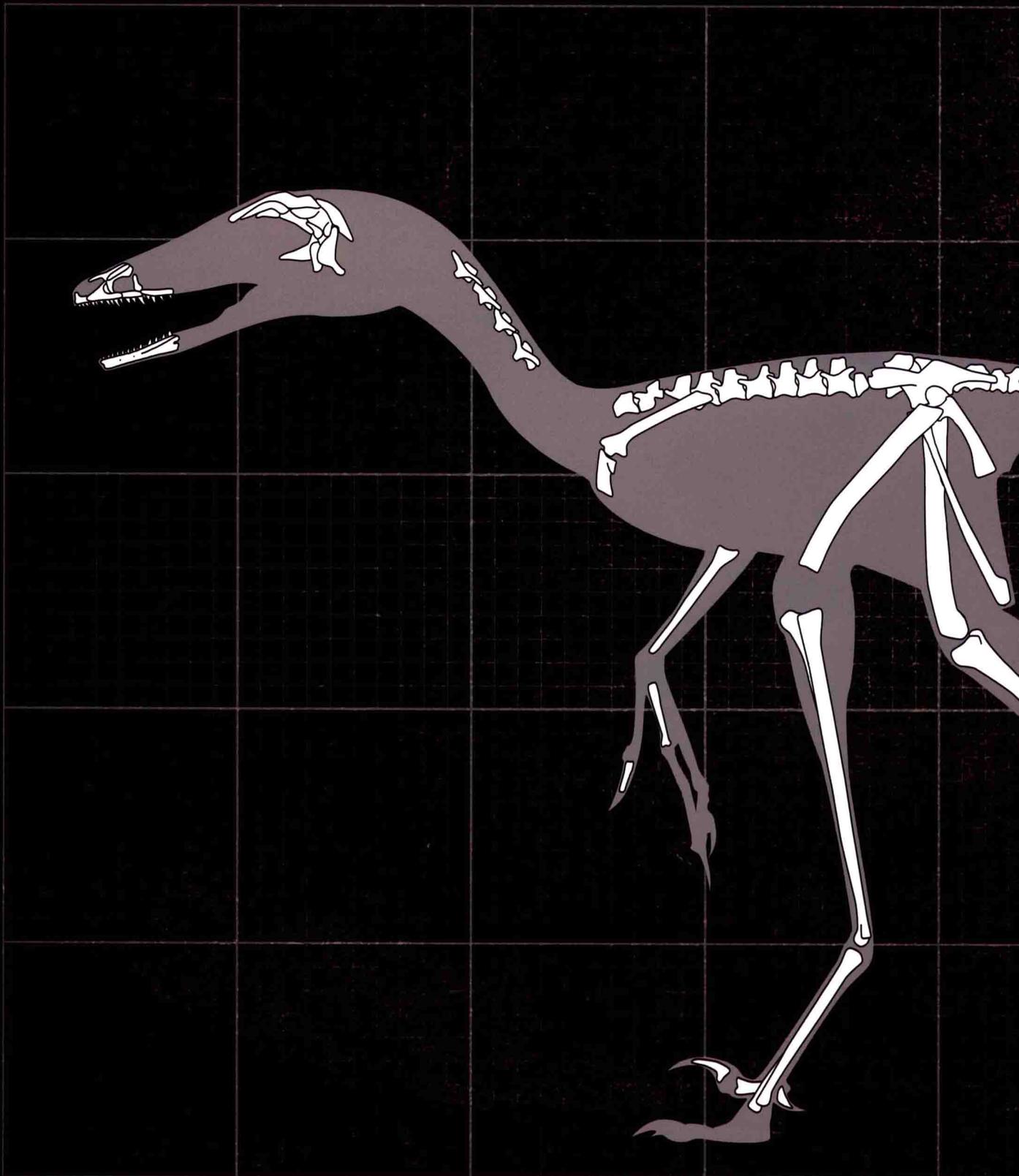
Jinfengopteryx elegans Ji et al., 2005





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Sinovenator changii Xu et al., 2002



蜥臀目 Saurischia

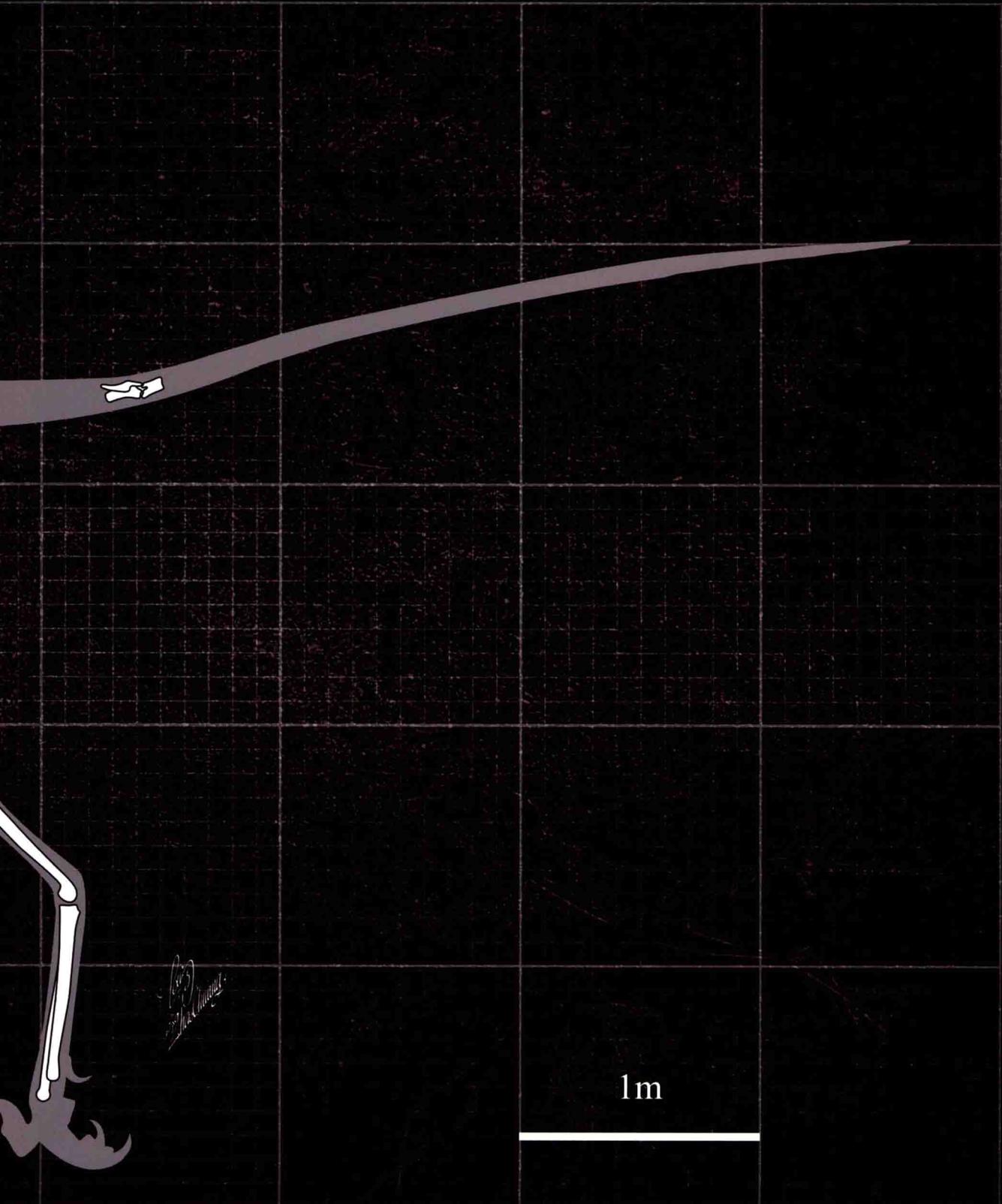
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

恐爪龙下目 Deinonychosauria



Sinovenator changii Xu et al., 2002

中文名称：张氏中国猎龙

学名：*Sinovenator changii* Xu et al., 2002

释义：属名意为“中国猎龙”。

种名献给牵头进行“热河生物群综合研究”的中科院院士张弥曼女士。

大小：体长小于 1m

食性：肉食

生存年代：早白垩世，距今约 1.25 亿年

化石产地：中国辽宁

命名者：徐星, Mark A. Norell, 汪筱林, Peter J. Makovicky, 吴肖春

Taxonomic Name: *Sinovenator changii* Xu et al., 2002

Etymology: The generic name means "the Chinese hunter".

The specific name honours the renowned Chinese paleontologist Miman Zhang, fellow of the academy of Science of China, who headed the comprehensive research of Jehol biota.

Body Size: around 1 meter long

Diet: Carnivore

Age: the Early Cretaceous, approximately 125 million years ago

Locality: Liaoning, China

First Described by: Xing Xu, Mark A. Norell, Xiaolin Wang, Peter J. Makovicky, Xiaochun Wu



Anchiornis huxleyi Xu et al., 2009



蜥臀目 Saurischia

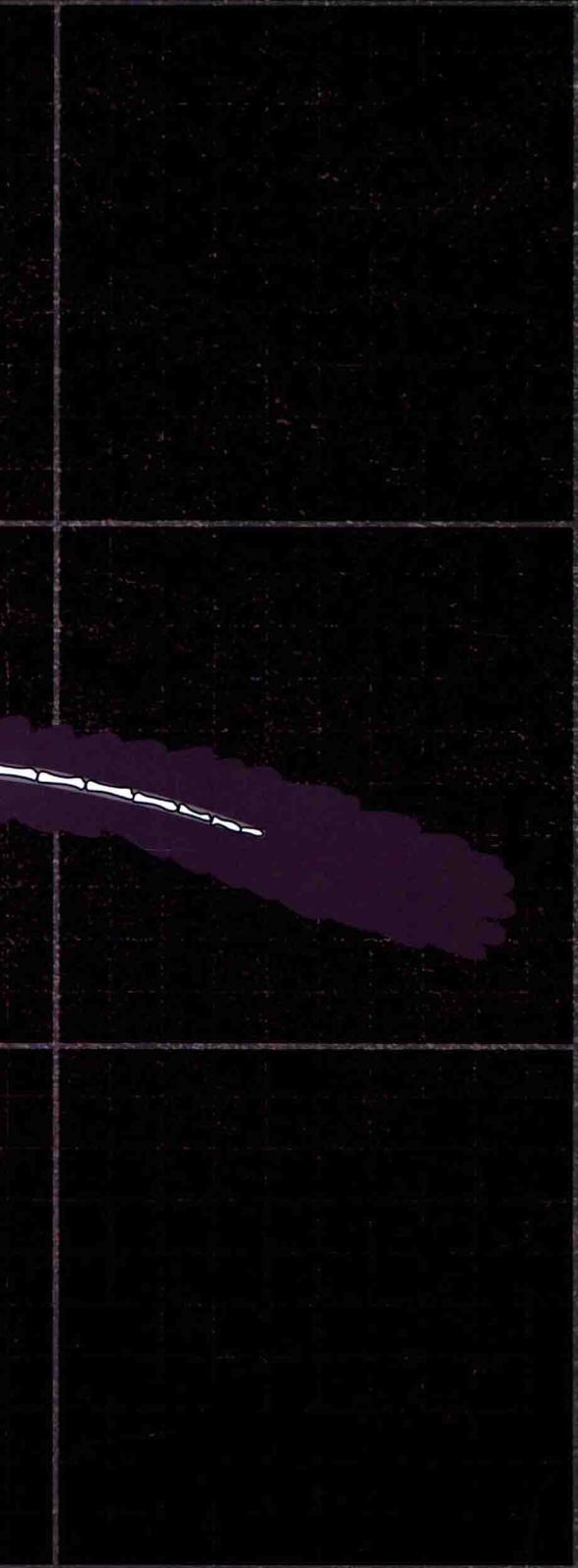
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

恐爪龙下目 Deinonychosauria



中文名称：赫氏近鸟龙

学名：*Anchiornis huxleyi* Xu et al., 2009

释义：属名意为“接近鸟类”。

种名是以托马斯·亨利·赫胥黎 (Thomas Henry Huxley) 为名，以纪念他对鸟类起源的研究。

大小：体长约 0.34m

食性：植食

生存年代：晚侏罗世，距今约 1.6 亿年

化石产地：中国辽宁

命名者：徐星，Mark A. Norell，Corwin Sullivan 等

Taxonomic Name: *Anchiornis huxleyi* Xu et al., 2009

Etymology: The generic name means "near bird".

The specific name was named in honor of Thomas Henry Huxley, an early proponent of biological evolution, and the first to propose a close evolutionary relationship between birds and dinosaurs.

Body Size: around 0.34 meters long

Diet: Herbivore

Age: the Late Jurassic, approximately 160 million years ago

Locality: Liaoning, China

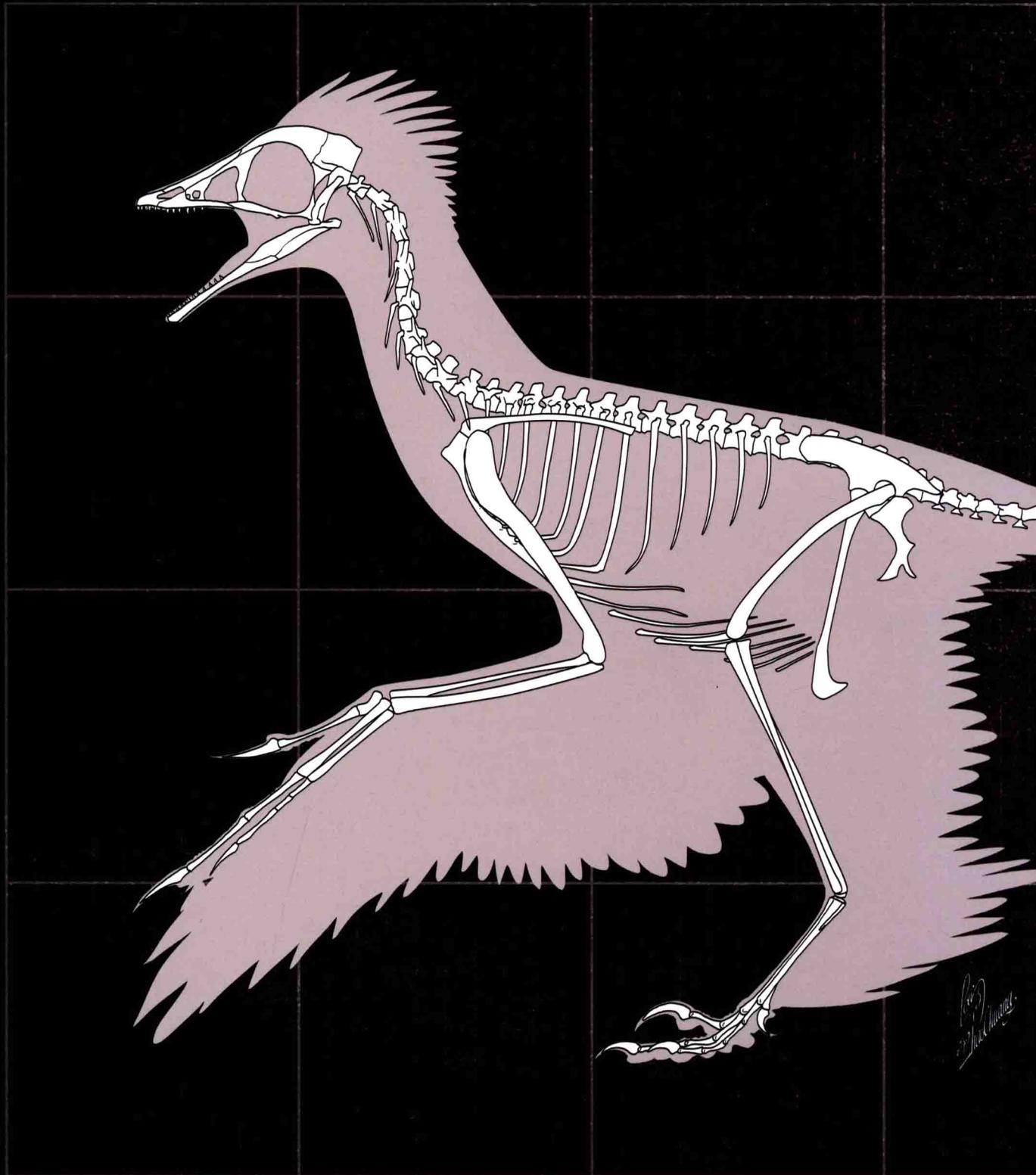
First Described by: Xing Xu, Mark A. Norell, Corwin Sullivan etc



Anchiornis huxleyi Xu et al., 2009



Xiaotingia zhengi Xu et al., 2011



中文名称: 郑氏晓廷龙
学名: *Xiaotingia zhengi* Xu et al., 2011
释义: 属名和种名都是以郑晓廷为名。
大小: 体重约 0.8kg
食性: 肉食
生存年代: 晚侏罗世, 距今约 1.6 亿年
化石产地: 中国辽宁
命名者: 徐星, 尤海鲁等

蜥臀目 Saurischia

兽脚亚目 Theropoda
坚尾龙类 Tetanurae
虚骨龙类 Coelurosauria
手盗龙形类 Maniraptoriformes
恐爪龙下目 Deinonychosauria

Taxonomic Name: *Xiaotingia zhengi* Xu et al., 2011

Etymology: The generic name and the specific name honor to Xiaoting Zheng.

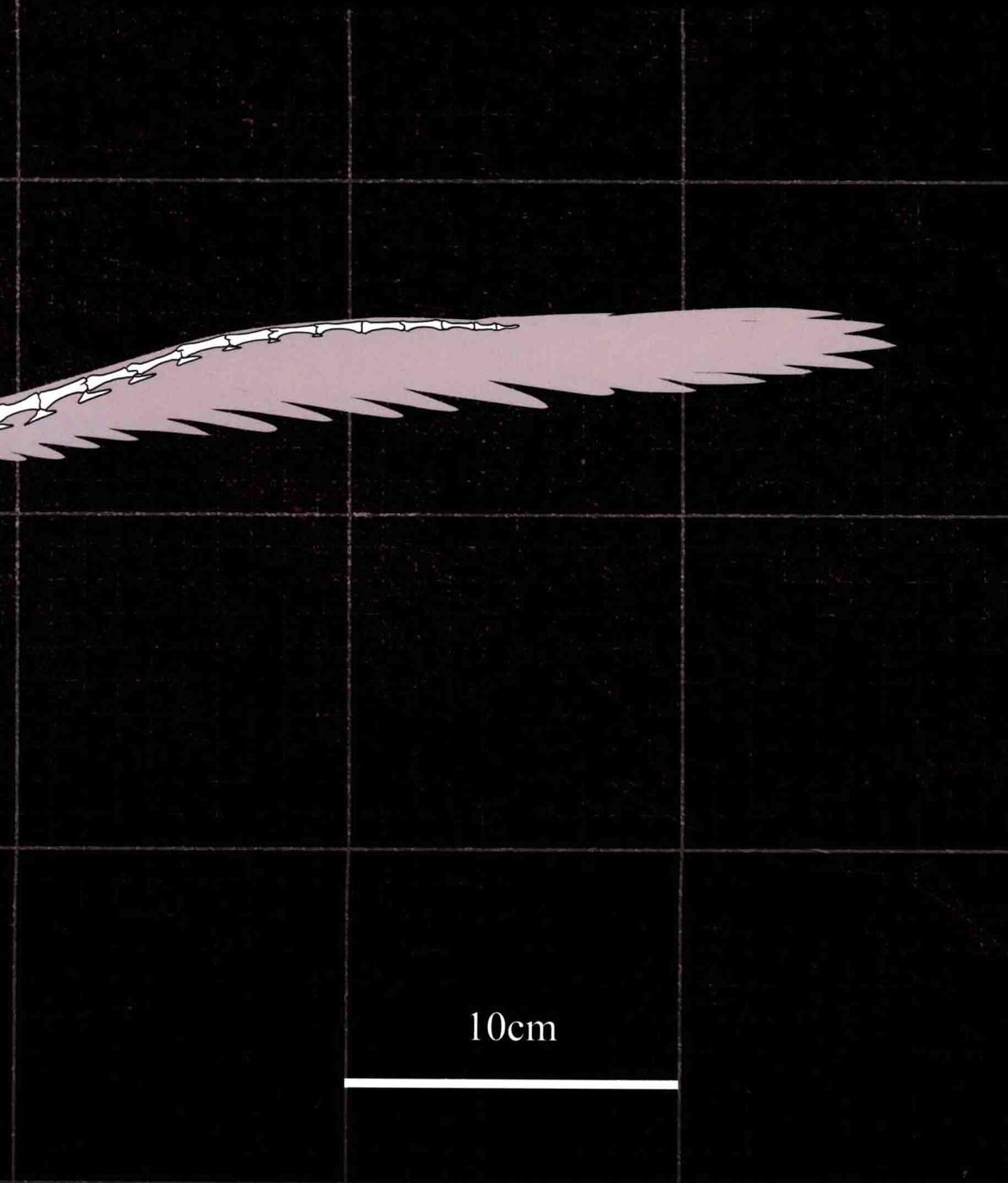
Body Size: an estimated weight of 0.8 kg

Diet: Carnivore

Age: the Late Jurassic, approximately 160 million years ago

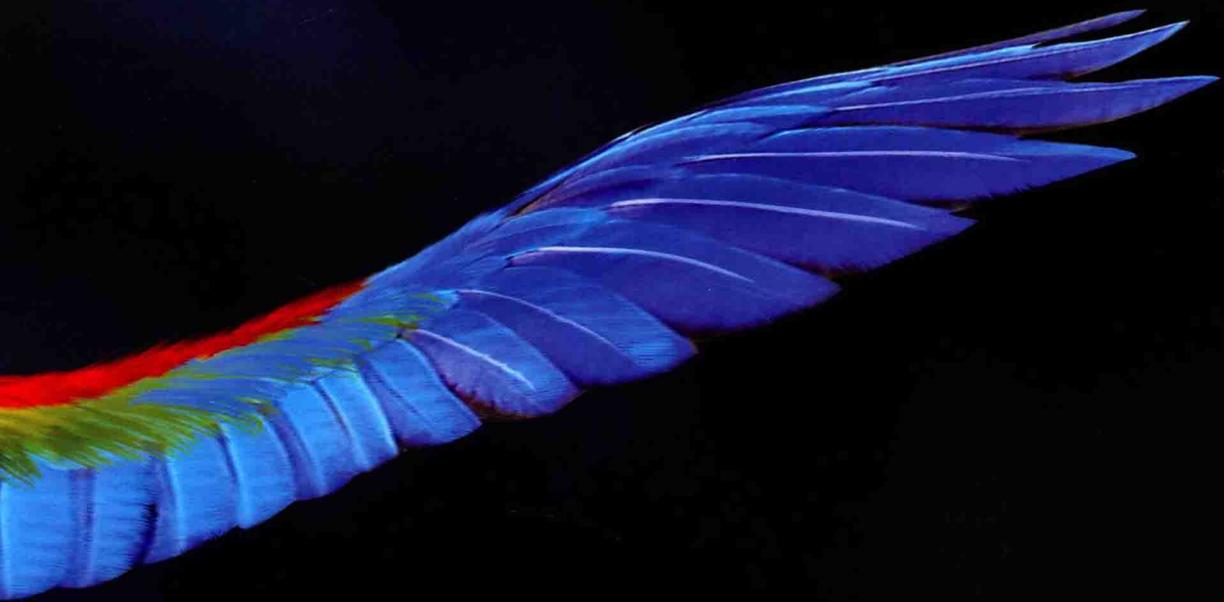
Locality: Liaoning, China

First Described by: Xing Xu, Hailu You etc



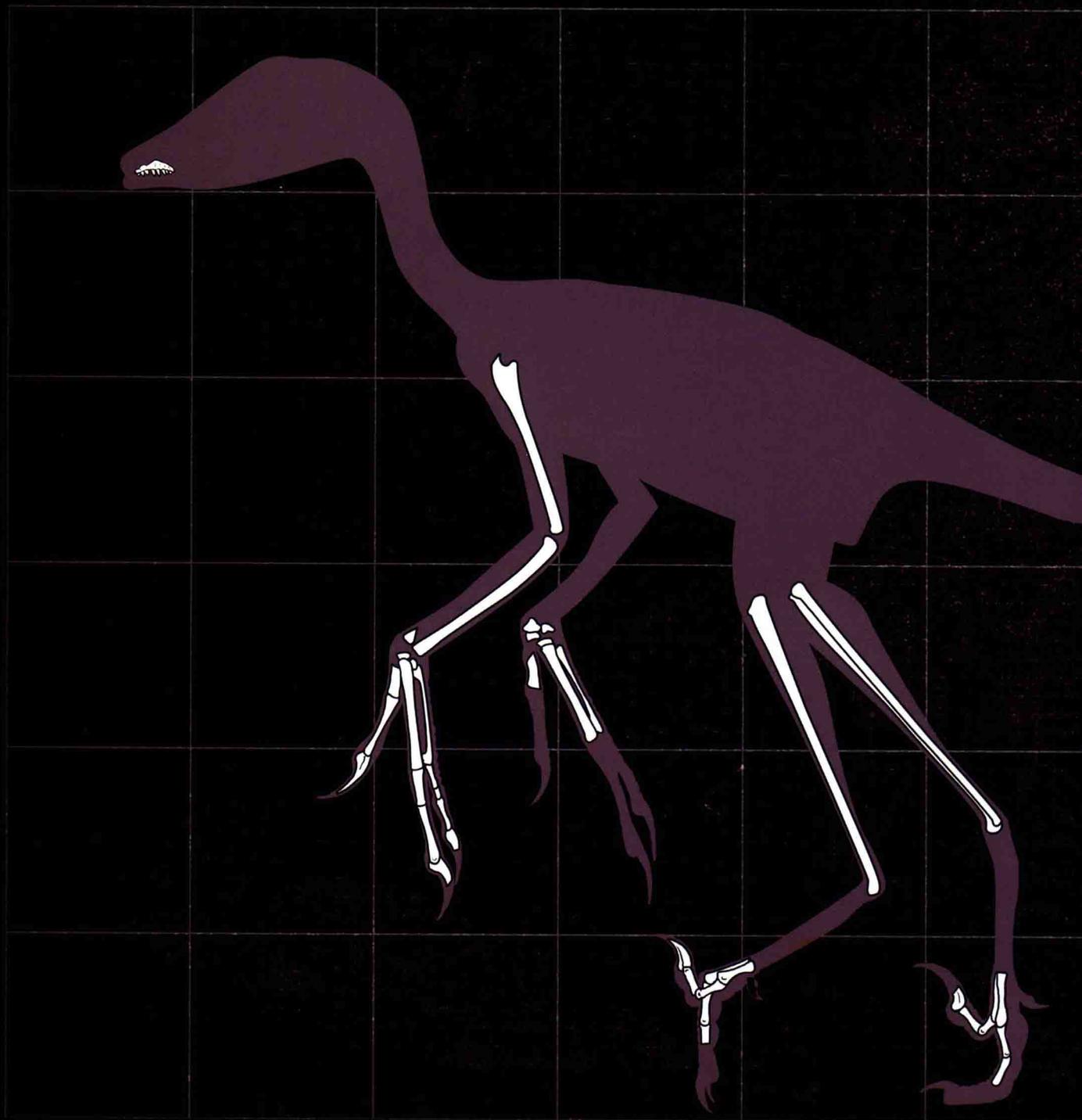


Xiaotingia zhengi Xu et al., 2011



Xiaotingia zhengi
© Xu et al., 2011

Graciliraptor lujiatunensis Xu et Wang, 2004



蜥臀目 Saurischia

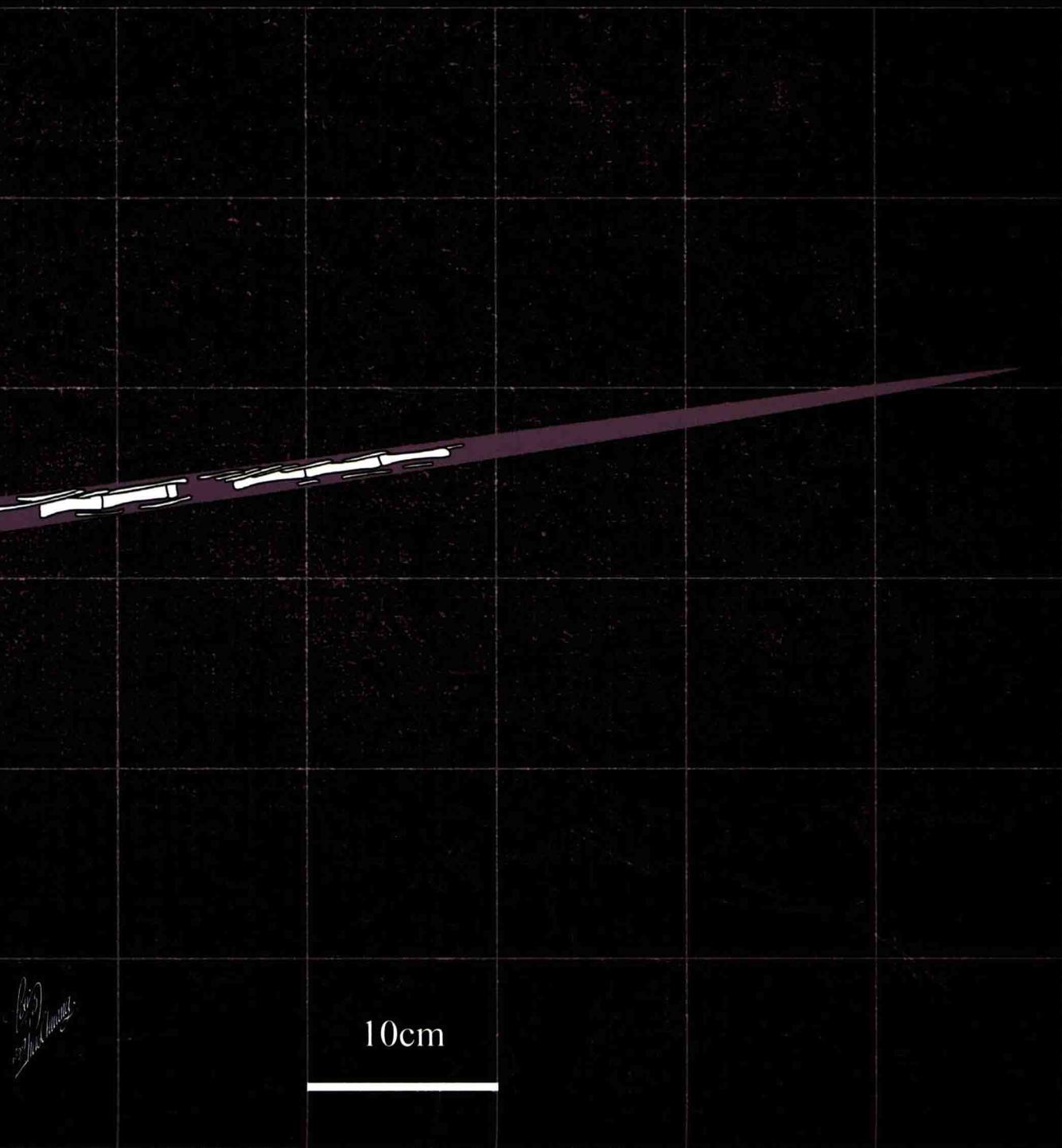
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

恐爪龙下目 Deinonychosauria





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Graciliraptor lujiatunensis Xu et Wang, 2004

中文名称：陆家屯纤细盗龙
学名：*Graciliraptor lujiatunensis* Xu et Wang, 2004
释义：属名意为“瘦的盗贼”。
种名代表化石的发现地陆家屯。
大小：体长约 1.5 m，高约 0.5 m，体重约 15 kg
食性：肉食
生存年代：早白垩世，距今 1.25 亿年
化石产地：中国辽宁
命名者：徐星，汪筱林

Taxonomic Name: *Graciliraptor lujiatunensis* Xu et Wang, 2004

Etymology: The generic name means "grace thief".

The specific name refers to the village Lujiatun of Chaoyang city in Liaoning, province where the fossil site is located.

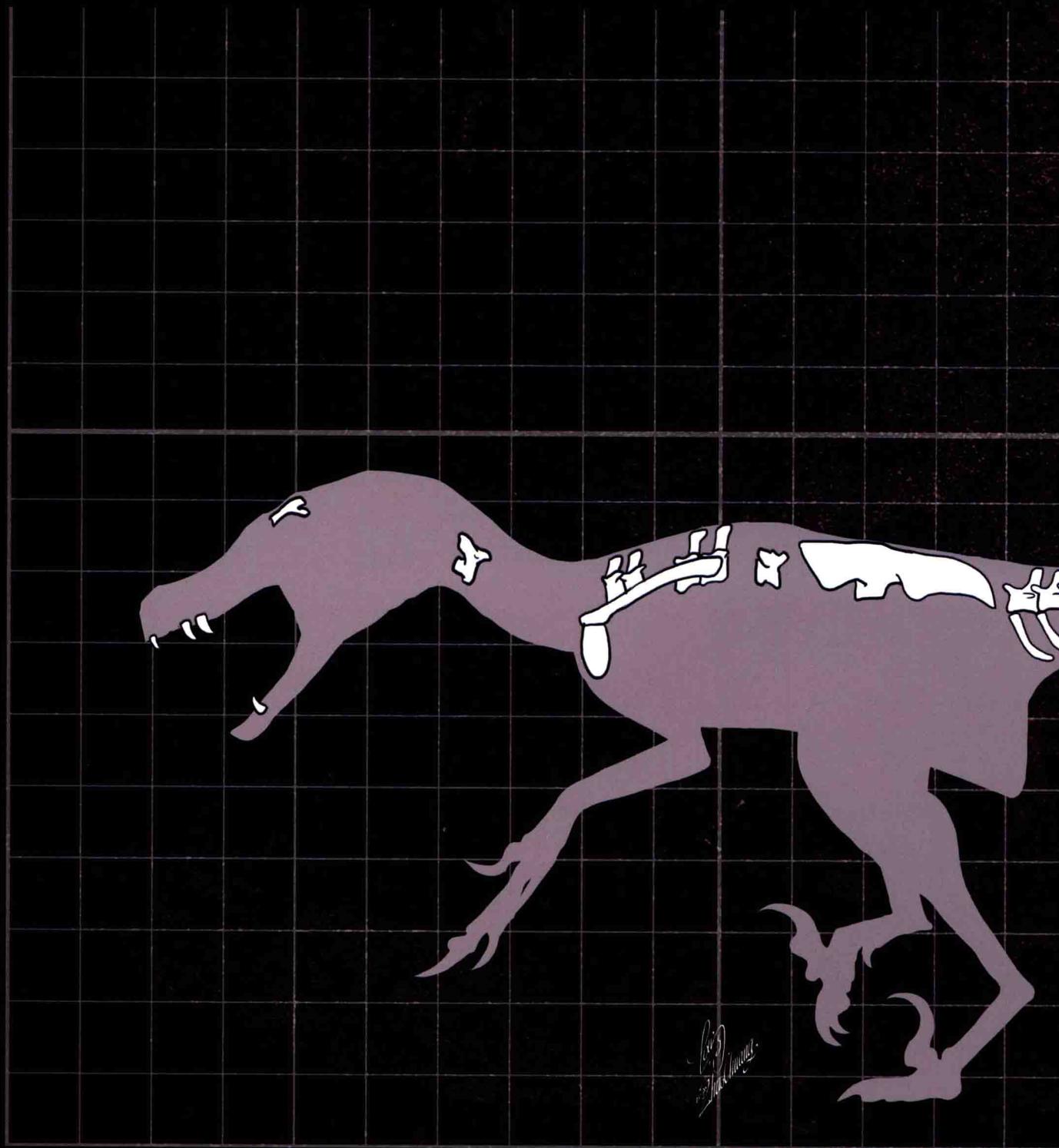
Body Size: around 1.5 meters long, 0.5 meters high, with an estimated weight of 15 kg

Diet: Carnivore

Age: the Early Cretaceous, approximately 125 million years ago

Locality: Liaoning, China

First Described by: Xing Xu, Xiaolin Wang



蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

恐爪龙下目 Deinonychosauria



Luanchuanraptor henanensis Lü et al., 2007

中文名称：河南栾川盗龙

学名：*Luanchuanraptor henanensis* Lü et al., 2007

释义：属名意为“来自栾川的盗贼”。

种名指其化石发现地河南。

大小：体长约 2.6 m, 高约 0.8 m, 体重约 30 kg

食性：肉食

生存年代：晚白垩世，距今 8000 万年

化石产地：中国河南

命名者：吕君昌，季强，贾松海等

Taxonomic Name: *Luanchuanraptor henanensis* Lü et al., 2007

Etymology: The generic name means "Luanchuan thief".

The specific name refers to Henan province.

Body Size: around 2.6 meters long, 0.8 meters high, with an estimated weight of 30 kg

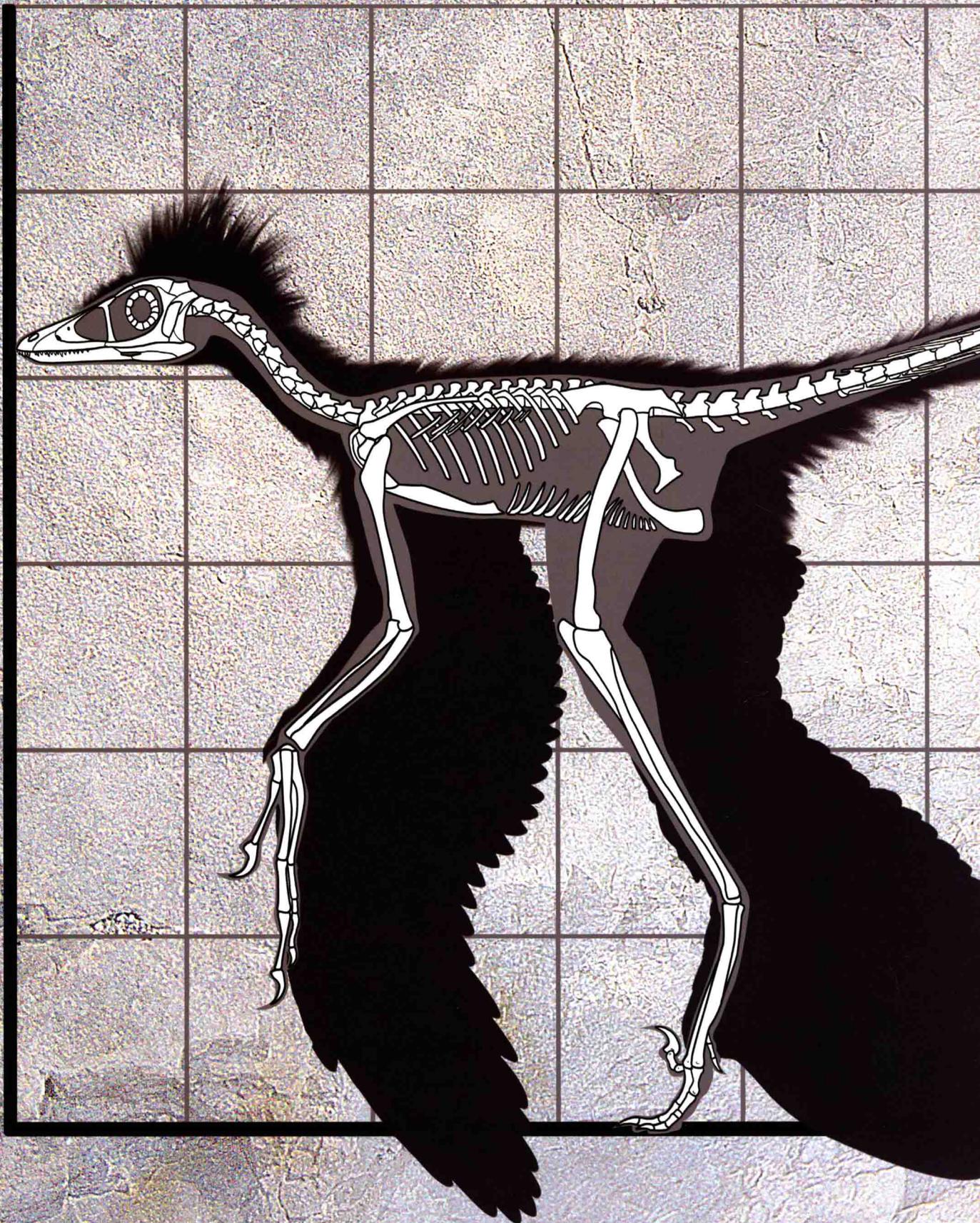
Diet: Carnivore

Age: the Late Cretaceous, approximately 80 million years ago

Locality: Henan, China

First Described by: Junchang Lü, Qiang Ji, Songhai Jia etc





蜥臀目 Saurischia

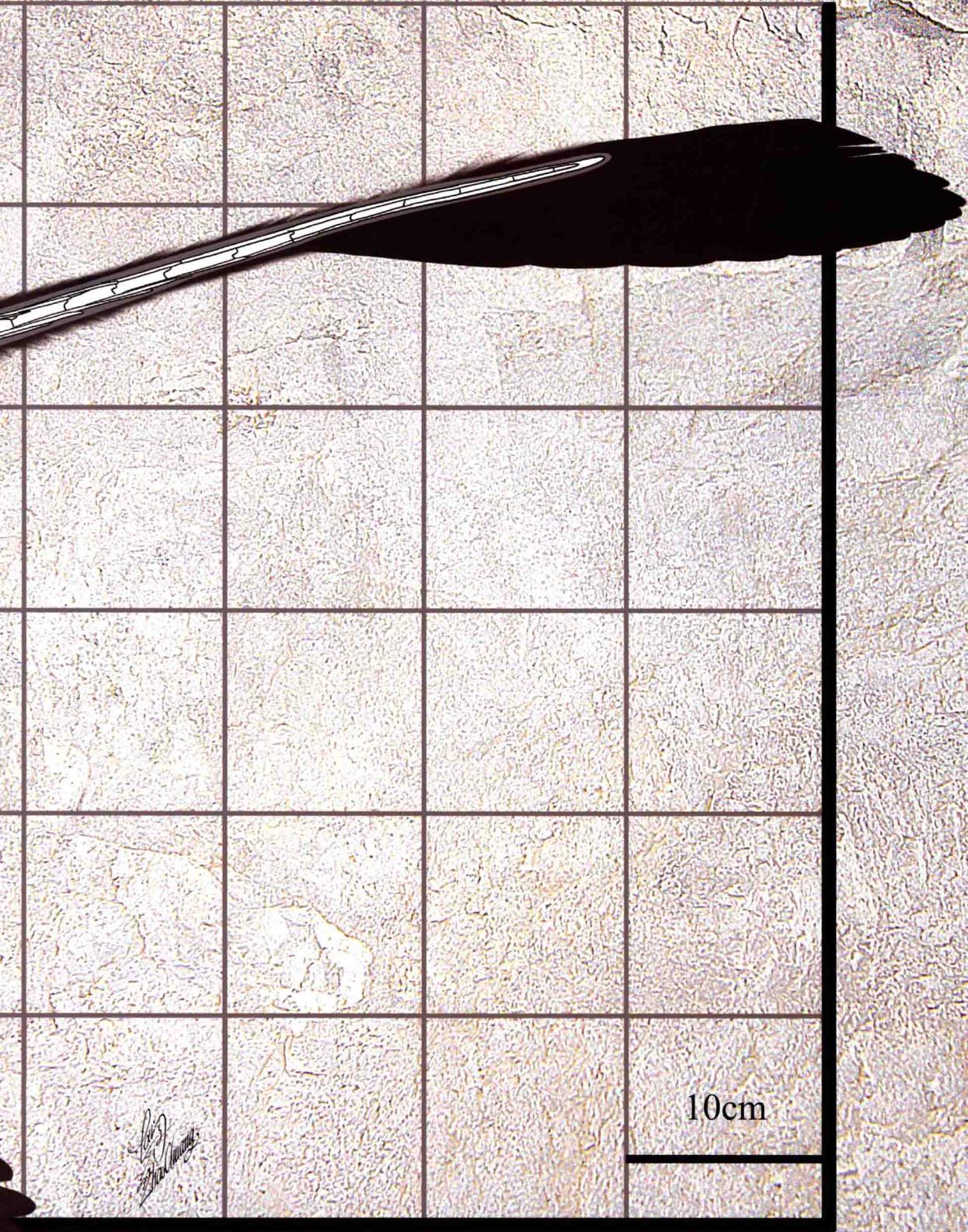
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

恐爪龙下目 Deinonychosauria



10cm



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Mark Wherry

Microraptor gui Xu et al., 2003



中文名称：顾氏小盗龙

学名：*Microraptor gui* Xu et al., 2003

释义：属名意为“小盗贼”。

种名献给著名双壳类专家顾知微院士。

大小：体长 0.55~0.77m, 体重约 1kg

食性：肉食

生存年代：早白垩世，距今约 1.25 亿年

化石产地：中国辽宁

命名者：徐星等

Taxonomic Name: *Microraptor gui* Xu et al., 2003

Etymology: The generic name means "small thief".

The specific name is named after renowned bivalvia specialist zhiwei Gu, fellow of the academy of science of China.

Body Size: around 0.55 to 0.77 meters long, with an estimated weight of 1 kg

Diet: Carnivore

Age: the Early Cretaceous, approximately 125 million years ago

Locality: Liaoning, China

First Described by: Xing Xu etc

Tianyuraptor ostromi Zheng et al., 2009



蜥臀目 Saurischia

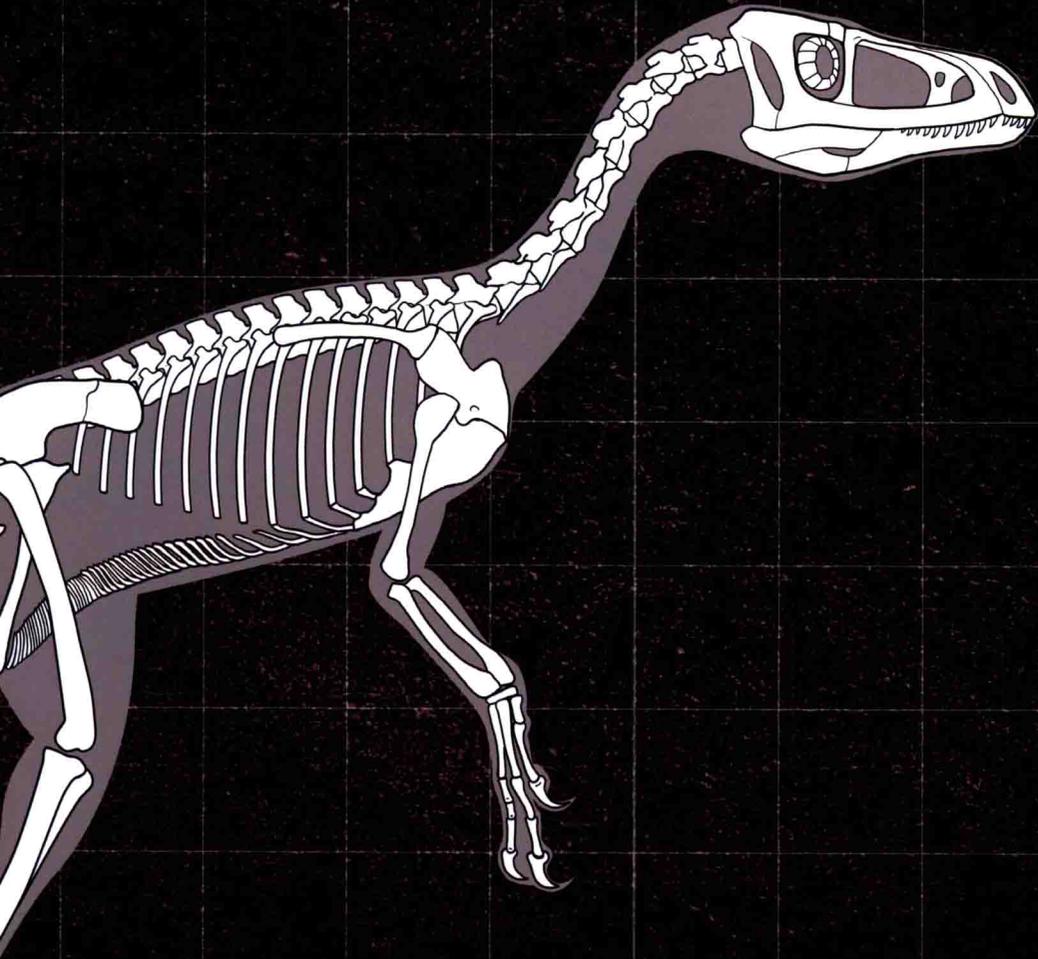
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

恐爪龙下目 Deinonychosauria



50cm

Tianyuraptor ostromi Zheng et al., 2009

中文名称：奥氏天宇盗龙

学名：*Tianyuraptor ostromi* Zheng et al., 2009

释义：属名意为“来自天宇自然博物馆的盗贼”，指其化石保存在山东天宇自然博物馆。

种名献给在研究驰龙科及有羽毛恐龙上有着特别贡献的古生物学家约翰·奥斯特伦姆（John Ostrom）。

大小：体长 1.5~2m, 高约 0.7m, 体重约 15kg

食性：肉食

生存年代：早白垩世，距今 1.22 亿年

化石产地：中国辽宁

命名者：郑晓廷、董枝明、徐星、赵祺、尤海鲁

Taxonomic Name: *Tianyuraptor ostromi* Zheng et al., 2009

Etymology: The generic name means "Tianyu raptor".

The specific name is in honor of John Ostrom who contributed greatly to the study of dromaeosaurid fossils, including *Deinonychus* and feathered dinosaurs.

Body Size: around 1.5 to 2 meters long, 0.7 meters high, with an estimated weight of 15 kg

Diet: Carnivore

Age: the Early Cretaceous, approximately 122 million years ago

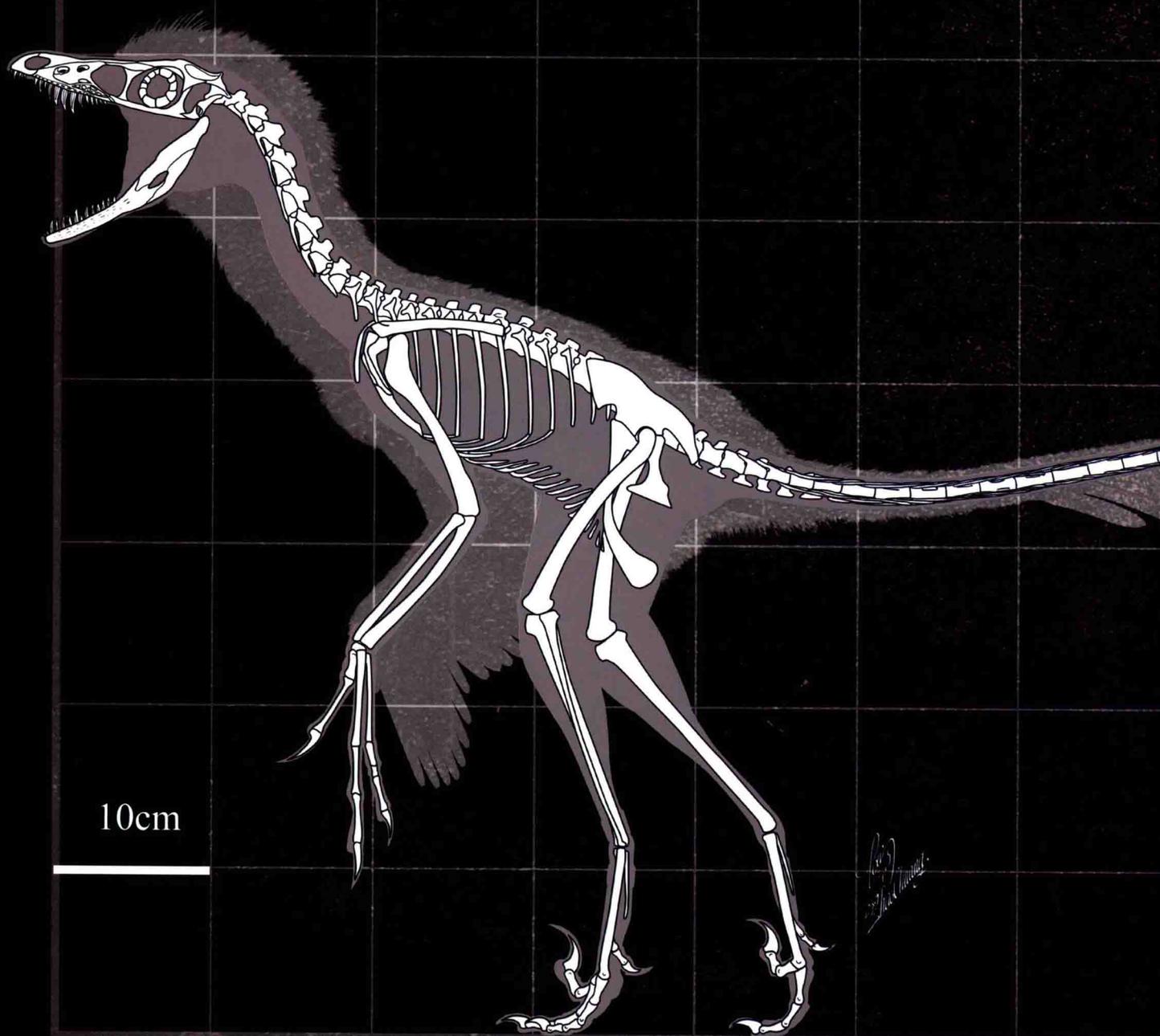
Locality: Liaoning, China

First Described by: Xiaoting Zheng, Zhiming Dong, Xing Xu, Qi Zhao, Hailu You



*Art by
Blindman*

Sinornithosaurus millenii Xu, Wang et Wu, 1999



蜥臀目 Saurischia

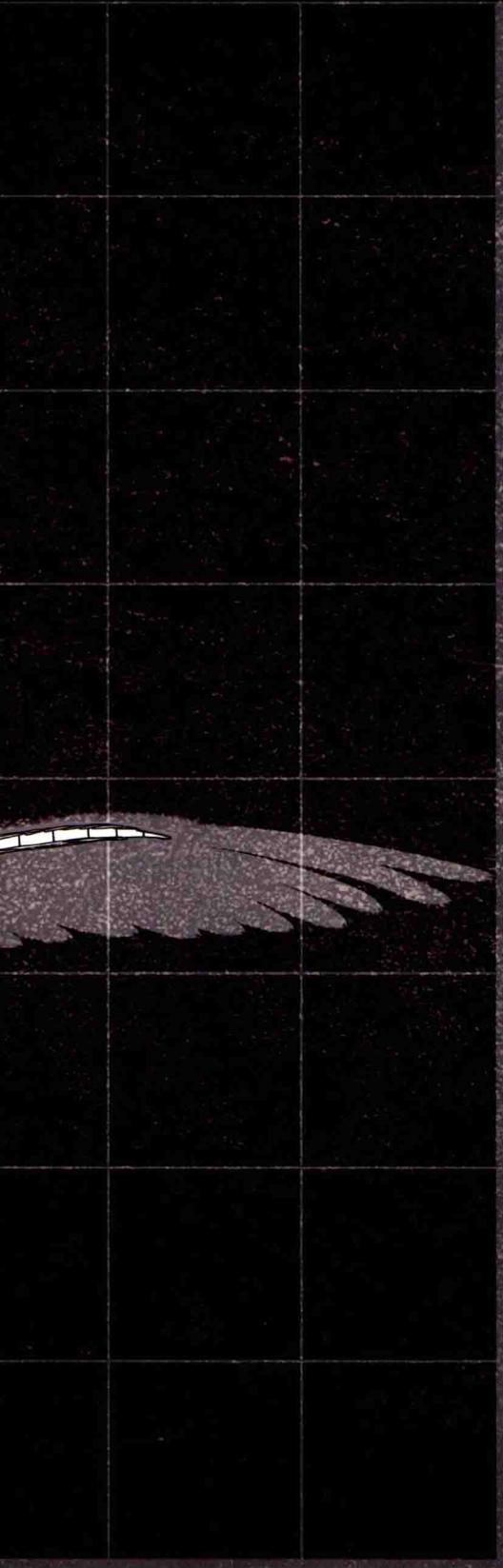
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

恐爪龙下目 Deinonychosauria



Sinornithosaurus millenii Xu, Wang et Wu, 1999

中文名称：千禧中国鸟龙

学名：*Sinornithosaurus millenii* Xu, Wang et Wu, 1999

释义：属名意为“来自中国的像鸟一样的蜥蜴”。

种名是为了纪念即将到来的千禧年。

大小：体长约 1m, 高约 0.4m, 体重约 5kg

食性：肉食

生存年代：早白垩世，距今 1.25 亿年

化石产地：中国辽宁

命名者：徐星，汪筱林，吴肖春

Taxonomic Name: *Sinornithosaurus millenii* Xu, Wang et Wu, 1999

Etymology: The generic name means "Chinese bird-like lizard".

The specific name honours millennium.

Body Size: around 1 meter long, 0.4 meters high, with an estimated weight of 5 kg

Diet: Carnivore

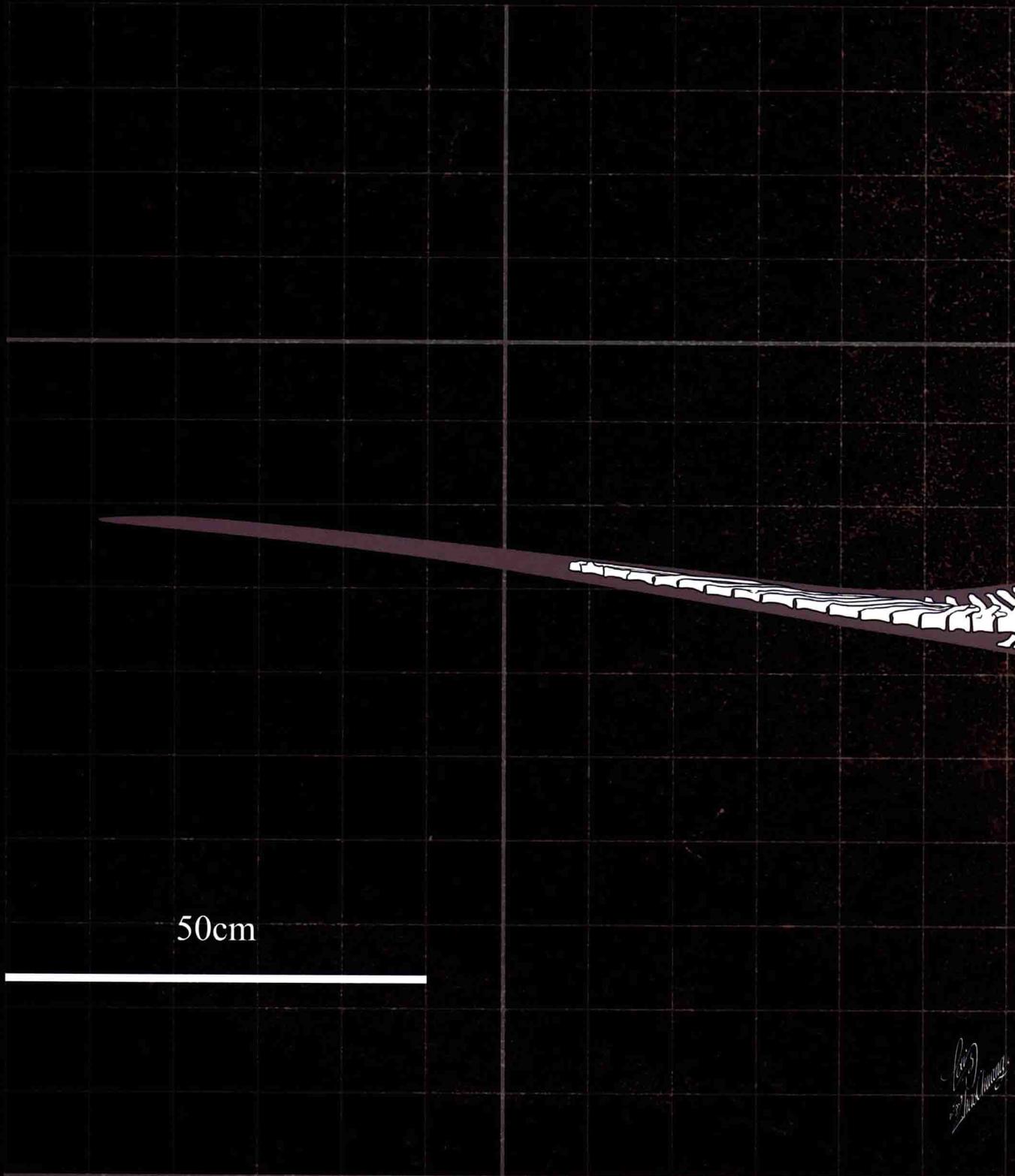
Age: the Early Cretaceous, approximately 125 million years ago

Locality: Liaoning, China

First Described by: Xing Xu, Xiaolin Wang, Xiaochun Wu



Linheraptor exquisitus Xu et al., 2010



蜥臀目 Saurischia

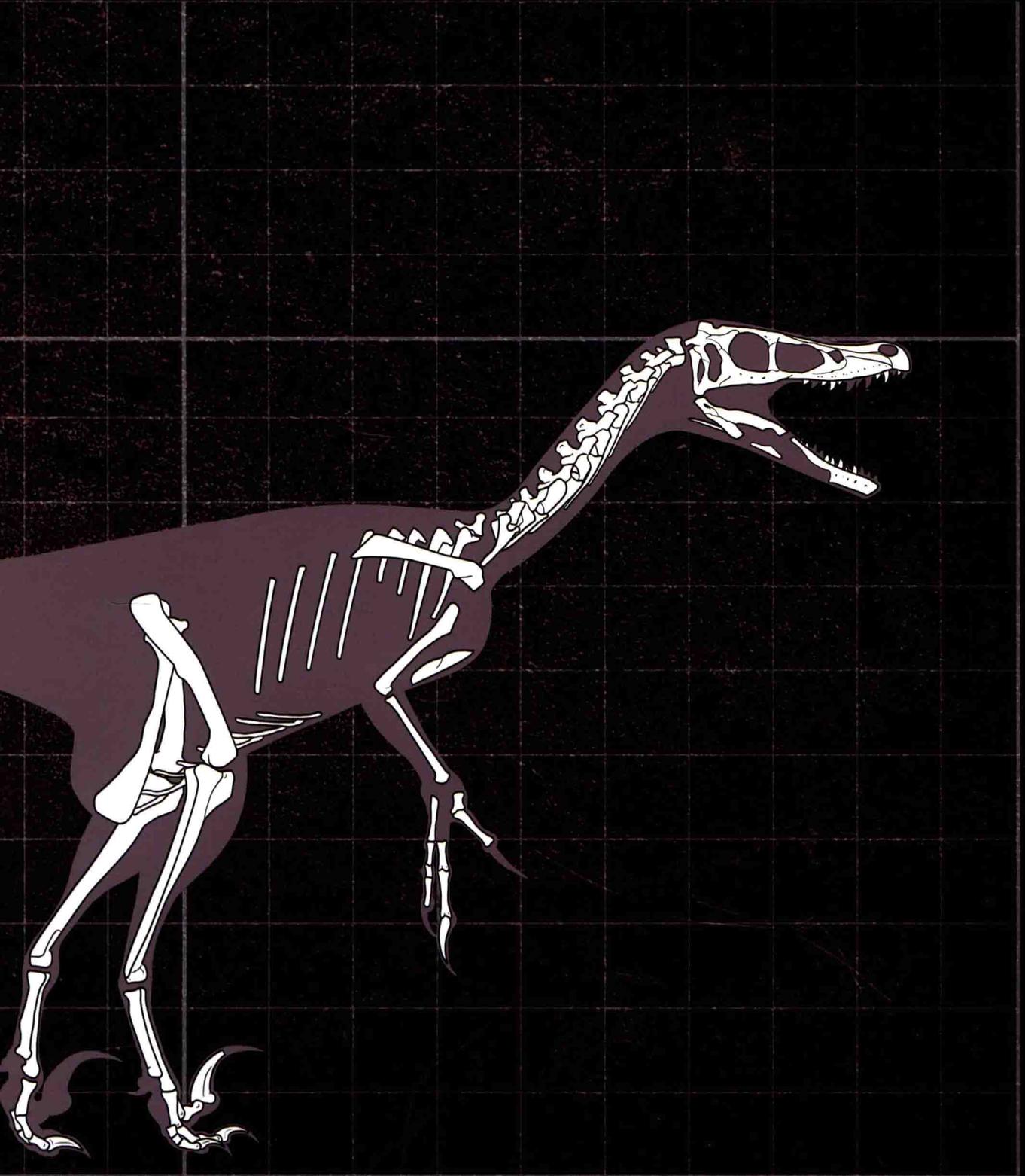
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

恐爪龙下目 Deinonychosauria



Linheraptor exquisitus Xu et al., 2010

中文名称：精美临河盗龙

学名：*Linheraptor exquisitus* Xu et al., 2010

释义：属名意为“来自临河的盗贼”。

种名指其保存精美完好的化石。

大小：体长约 2.5m, 高约 1.3m, 体重约 25kg

食性：肉食

生存年代：晚白垩世，距今 8000 万年

化石产地：中国内蒙古

命名者：徐星，Jonah Choiniere，Michael D. Pittman 等

Taxonomic Name: *Linheraptor exquisitus* Xu et al., 2010

Etymology: The generic name means "Linhe thief".

The specific name refers to the well-preserved holotype.

Body Size: around 2.5 meters long, 1.3 meters high, with an estimated weight of 25 kg

Diet: Carnivore

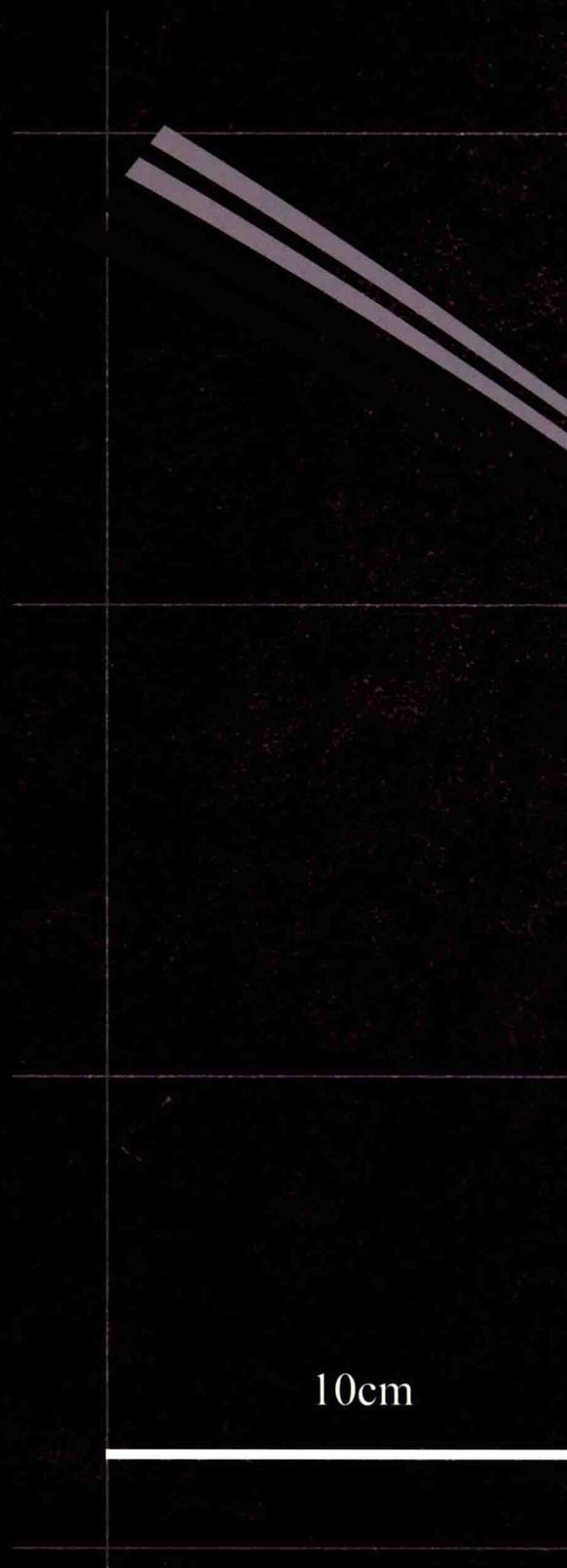
Age: the Late Cretaceous, approximately 80 million years ago

Locality: Inner Mongolia, China

First Described by: Xing Xu, Jonah Choiniere, Michael D. Pittman etc



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蜥臀目 Saurischia

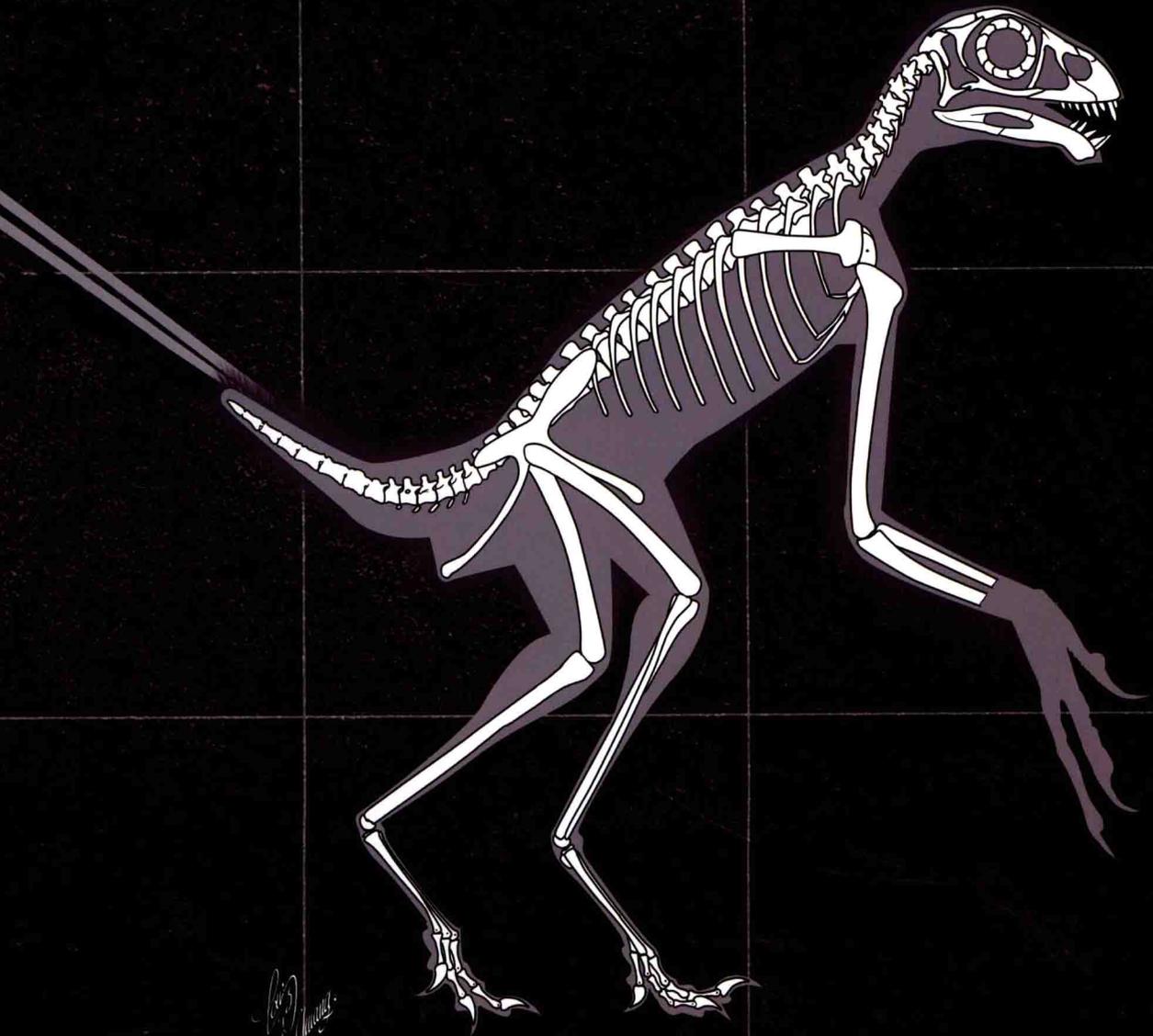
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

鸟翼类 Avialae



Epidexipteryx hui Zhang et al., 2008

中文名称：胡氏耀龙

学名：*Epidexipteryx hui* Zhang et al., 2008

释义：属名意为“炫耀的羽毛”。

种名献给中国古哺乳动物学家胡耀明。

大小：体长约 0.445m

食性：杂食

生存年代：晚侏罗世，距今约 1.6 亿年

化石产地：中国内蒙古

命名者：张福成，周忠和，徐星等

Taxonomic Name: *Epidexipteryx hui* Zhang et al., 2008

Etymology: The generic name means "display feather".

The specific name honours the Chinese renowned paleomammologist Yaoming Hu.

Body Size: around 0.445 meters long

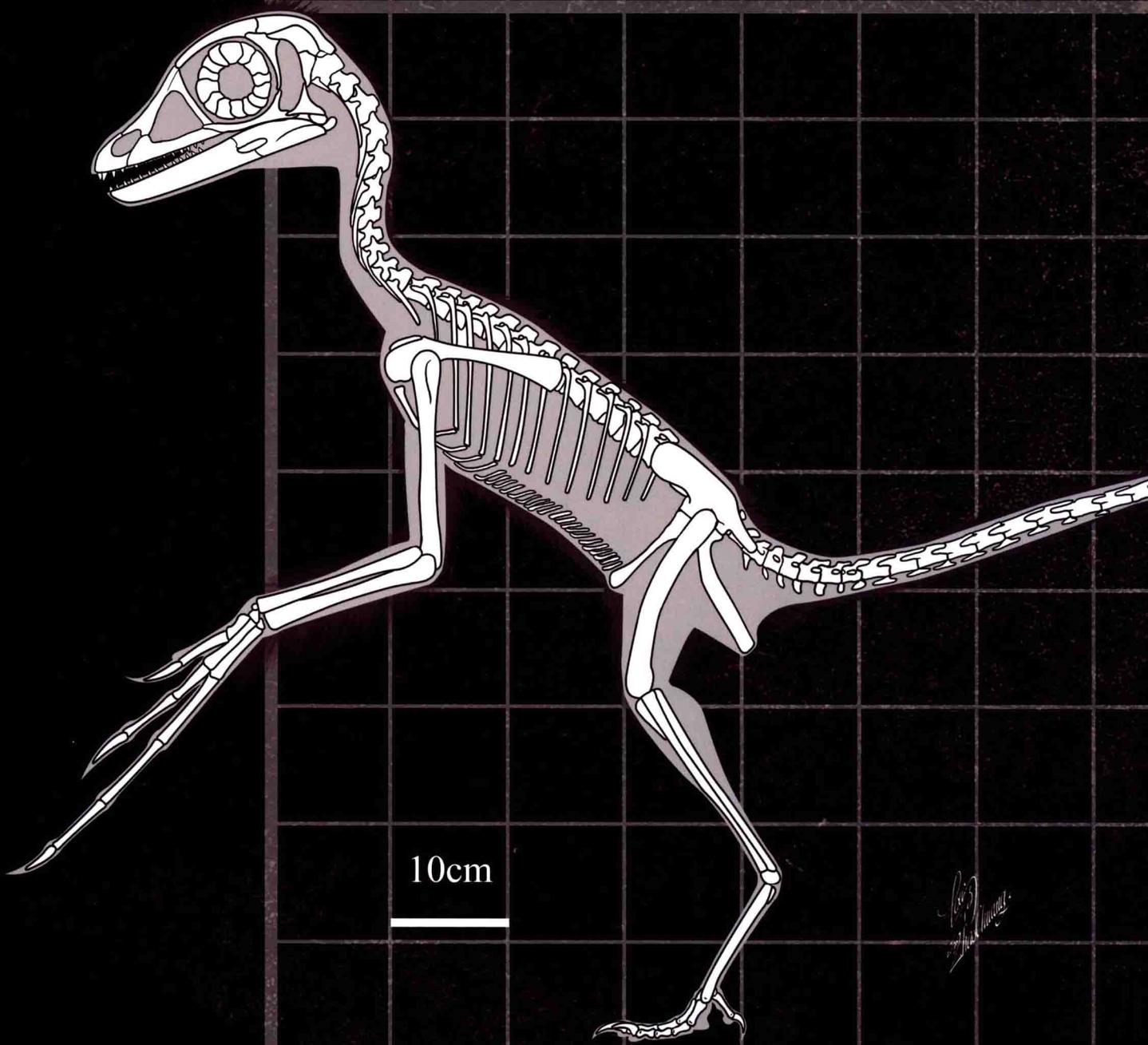
Diet: Omnivore

Age: the Late Jurassic, approximately 160 million years ago

Locality: Inner Mongolia, China

First Described by: Fucheng Zhang, Zhonghe Zhou, Xing Xu etc





10cm

蜥臀目 Saurischia

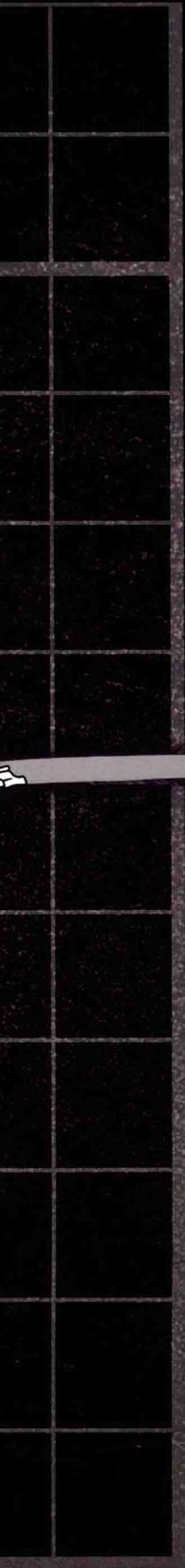
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

鸟翼类 Avialae



Epidendrosaurus ninchengensis Zhang et al., 2002

Epidendrosaurus ninchengensis Zhang et al., 2002

中文名称: 宁城树息龙

学名: *Epidendrosaurus ninchengensis* Zhang et al., 2002

释义: 属名意为“生活在树上的蜥蜴”。

种名指其化石产地。

大小: 不详

食性: 杂食

生存年代: 晚侏罗世, 距今约 1.6 亿年

化石产地: 中国内蒙古

命名者: 张福成, 周忠和, 徐星等

Taxonomic Name: *Epidendrosaurus ninchengensis* Zhang et al., 2002

Etymology: The generic name means "lizard lives on the tree".

The specific name represents the place of fossil discovery.

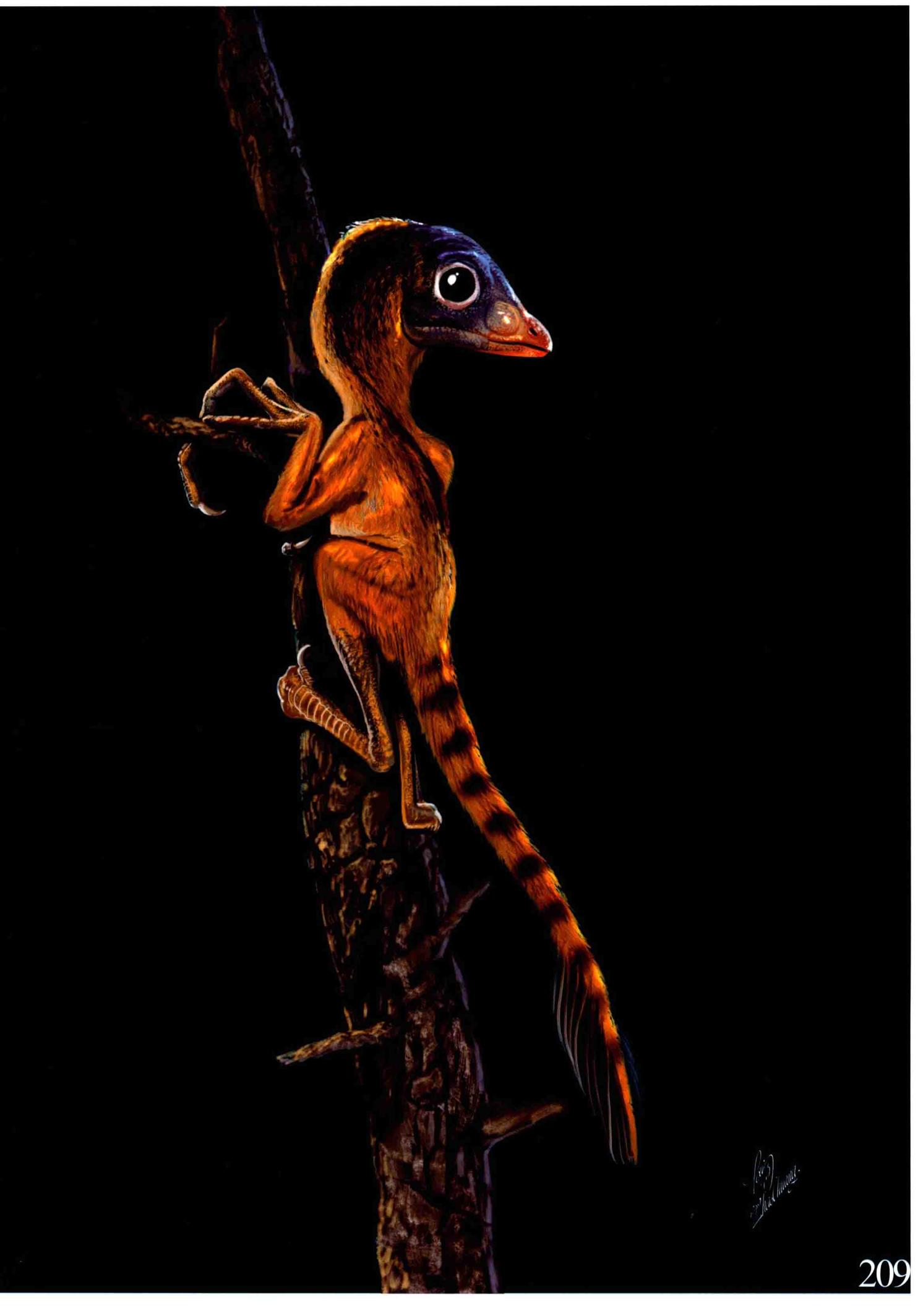
Body Size: Unknown

Diet: Omnivore

Age: the Late Jurassic, approximately 160 million years ago

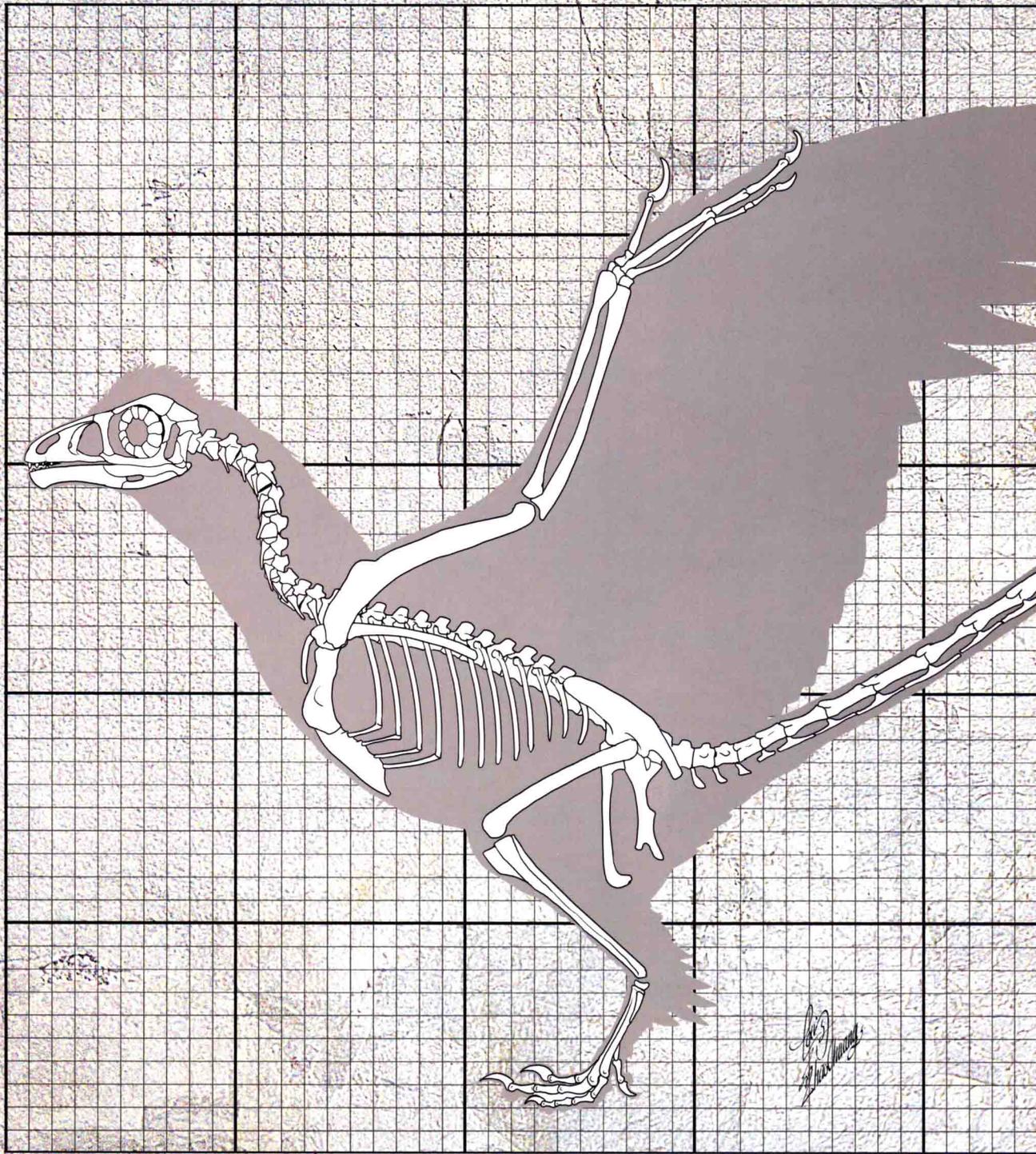
Locality: Inner Mongolia, China

First Described by: Fucheng Zhang, Zhonghe Zhou, Xing Xu etc



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Jeholornis prima Zhou et Zhang, 2002



蜥臀目 Saurischia

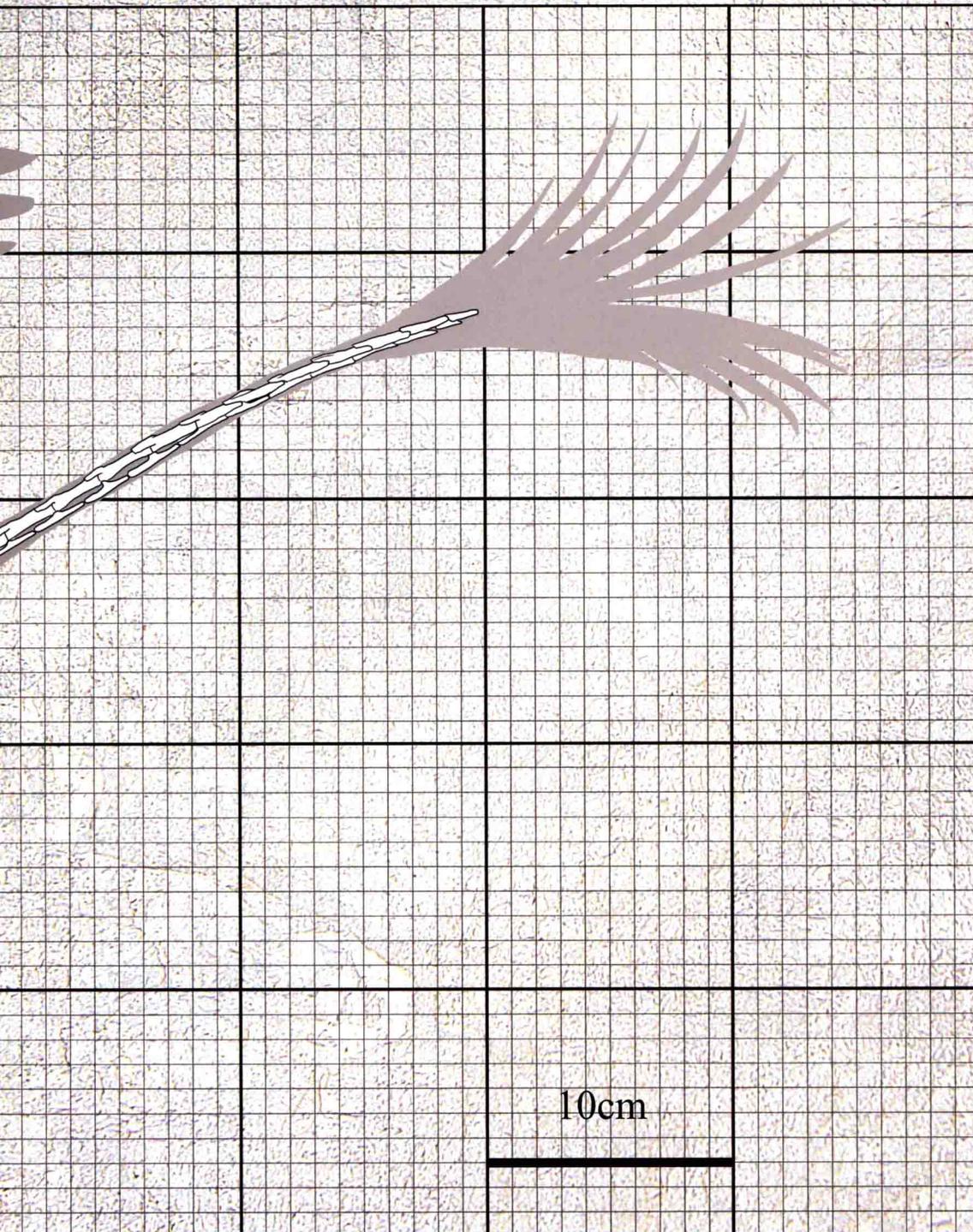
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

鸟翼类 Avialae





中文名称：原始热河鸟

学名：*Jeholornis prima* Zhou et Zhang, 2002

释义：属名意为“来自热河”。
种名意为“原始的”。

大小：体长约 0.7m

食性：种子等

生存年代：早白垩世

化石产地：中国河北

命名者：周忠和，张福成

Taxonomic Name: *Jeholornis prima* Zhou et Zhang, 2002

Etymology: The generic name refers to Rehe where the fossil remains were found.

The specific name means "primary".

Body Size: around 0.7 meters long

Diet: Seed etc

Age: the Early Cretaceous

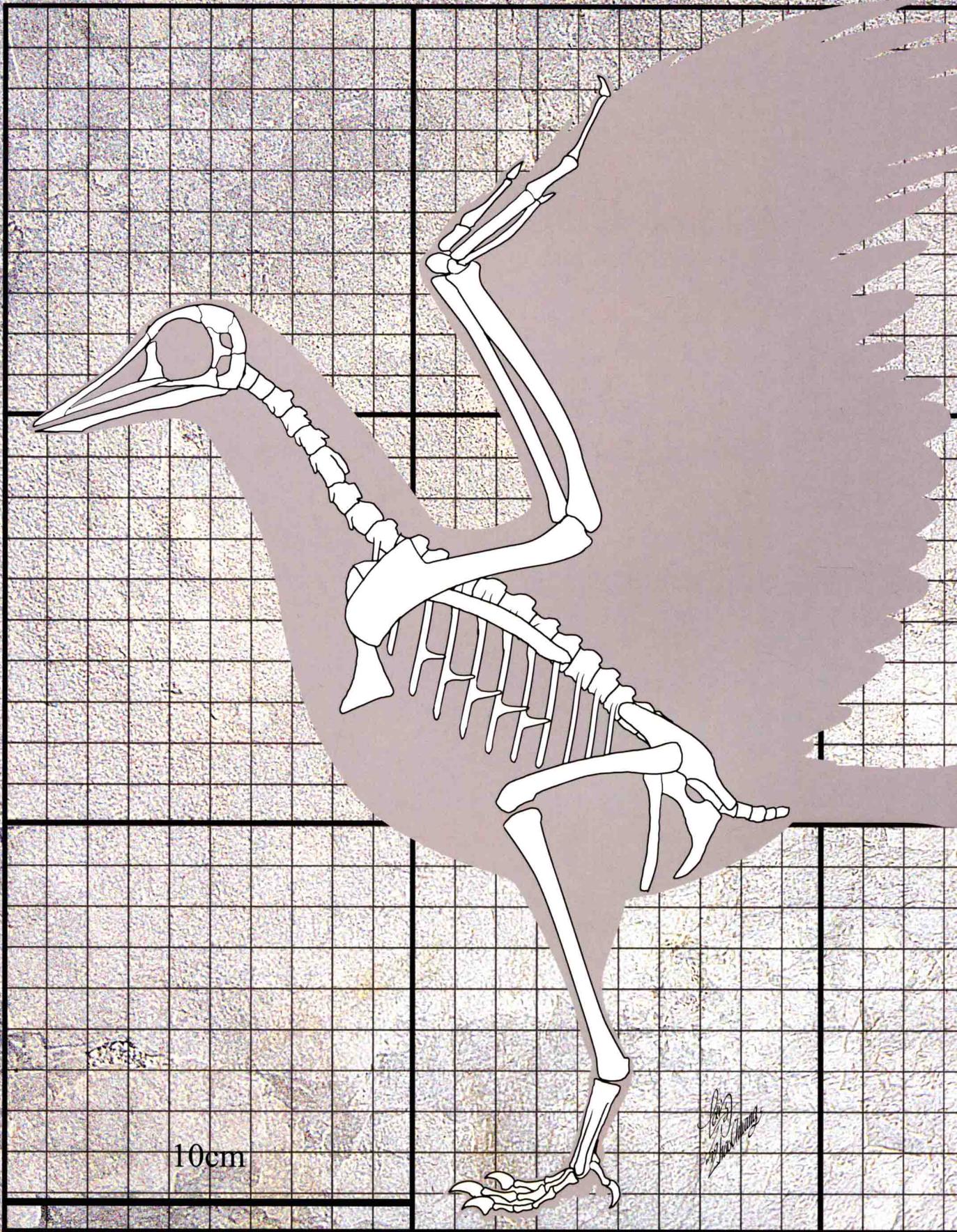
Locality: Hebei, China

First Described by: Zhonghe Zhou, Fucheng Zhang

Zhou et Zhang
2002

Jeholornis prima Zhou et Zhang, 2002





10cm

蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

鸟翼类 Avialae



Zhongjianornis yangi Zhou, Zhang et Li, 2009



Zhongjianornis yangi Zhou, Zhang et Li, 2009

中文名称：杨氏钟健鸟

学名：*Zhongjianornis yangi* Zhou, Zhang et Li, 2009

释义：属名和种名都是纪念中国古生物学的奠基人——杨钟健先生。

大小：体长约 0.3m

食性：杂食

生存年代：早白垩世

化石产地：中国辽宁

命名者：周忠和，张福成，李志恒

Taxonomic Name: *Zhongjianornis yangi* Zhou, Zhang et Li, 2009

Etymology: The genus name and the specific name all honor to Zhongjian Yang, founder of Chinese paleontology.

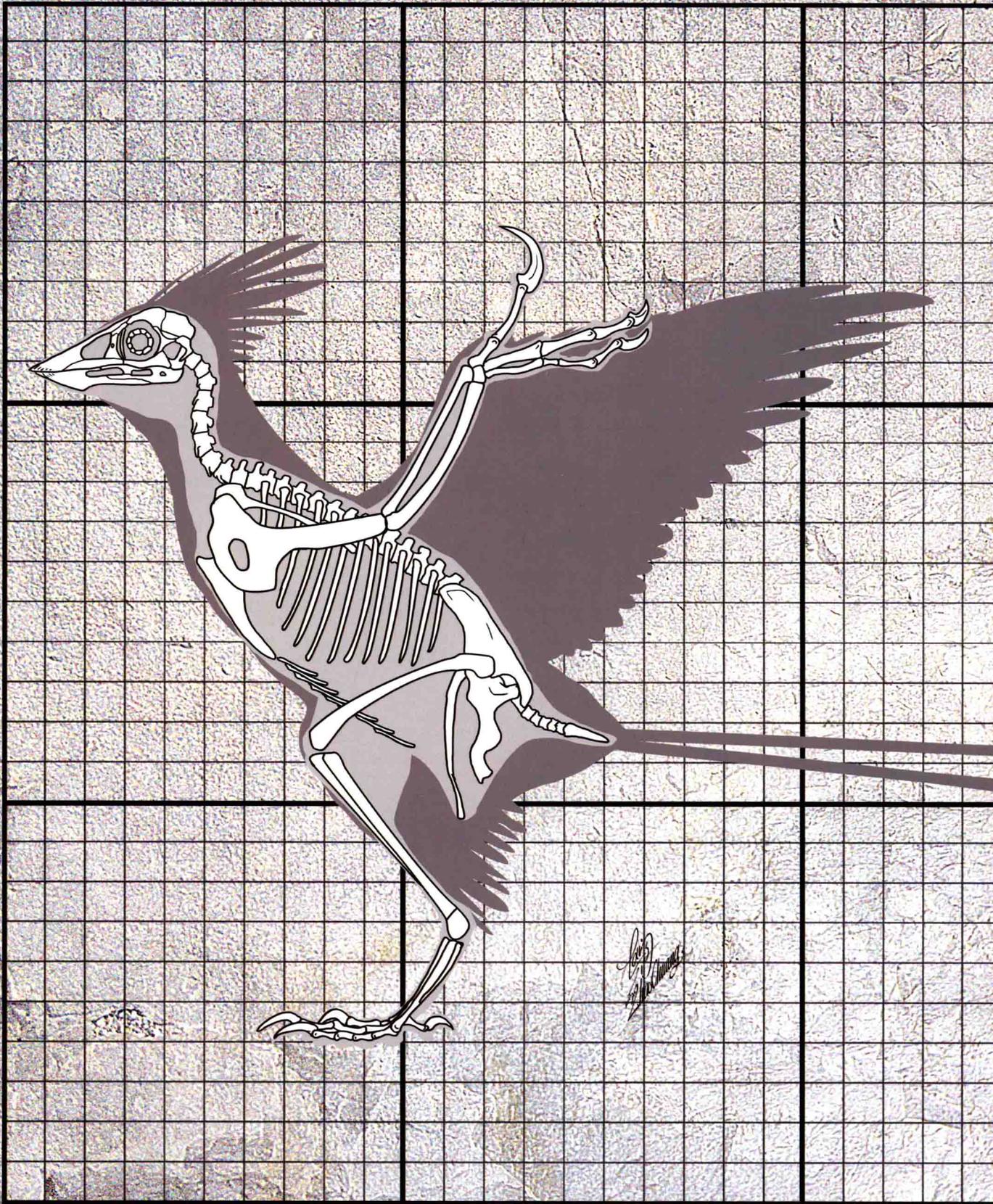
Body Size: around 0.3 meters long

Diet: Omnivore

Age: the Early Cretaceous

Locality: Liaoning, China

First Described by: Zhonghe Zhou, Fucheng Zhang, Zhiheng Li



蜥臀目 Saurischia

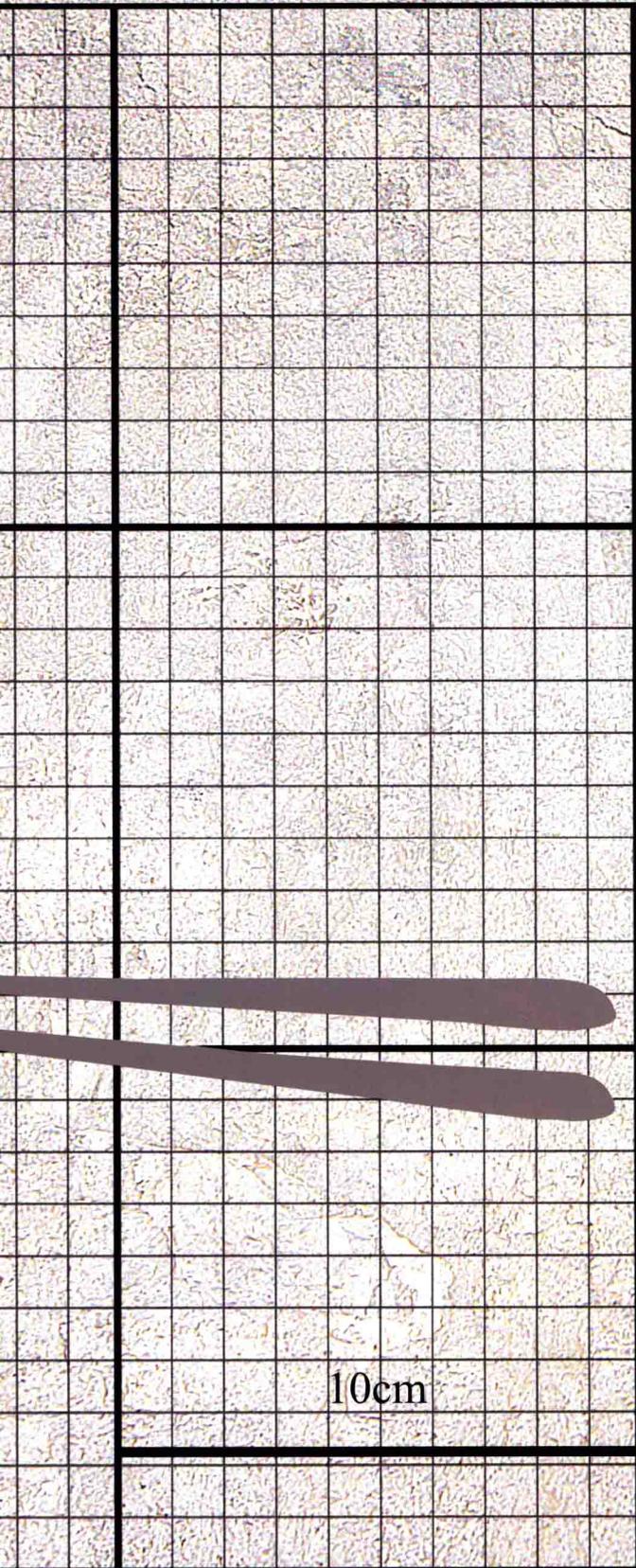
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

鸟翼类 Avialae



中文名称：圣贤孔子鸟

学名：*Confuciusornis sanctus* Hou et al., 1995

释义：属名是纪念中国古代的思想家教育家孔子。
种名是历代封建帝王赋予孔子的封号。

大小：体长约 0.18m

食性：杂食

生存年代：早白垩世

化石产地：中国辽宁

命名人：侯连海、周忠和、顾玉才、张和

Taxonomic Name: *Confuciusornis sanctus* Hou et al., 1995

Etymology: The generic name and specific name are in honor of Confucius, an ancient Chinese philosopher and educator.

Body Size: around 0.18 meters long

Diet: Omnivore

Age: the Early Cretaceous

Locality: Liaoning, China

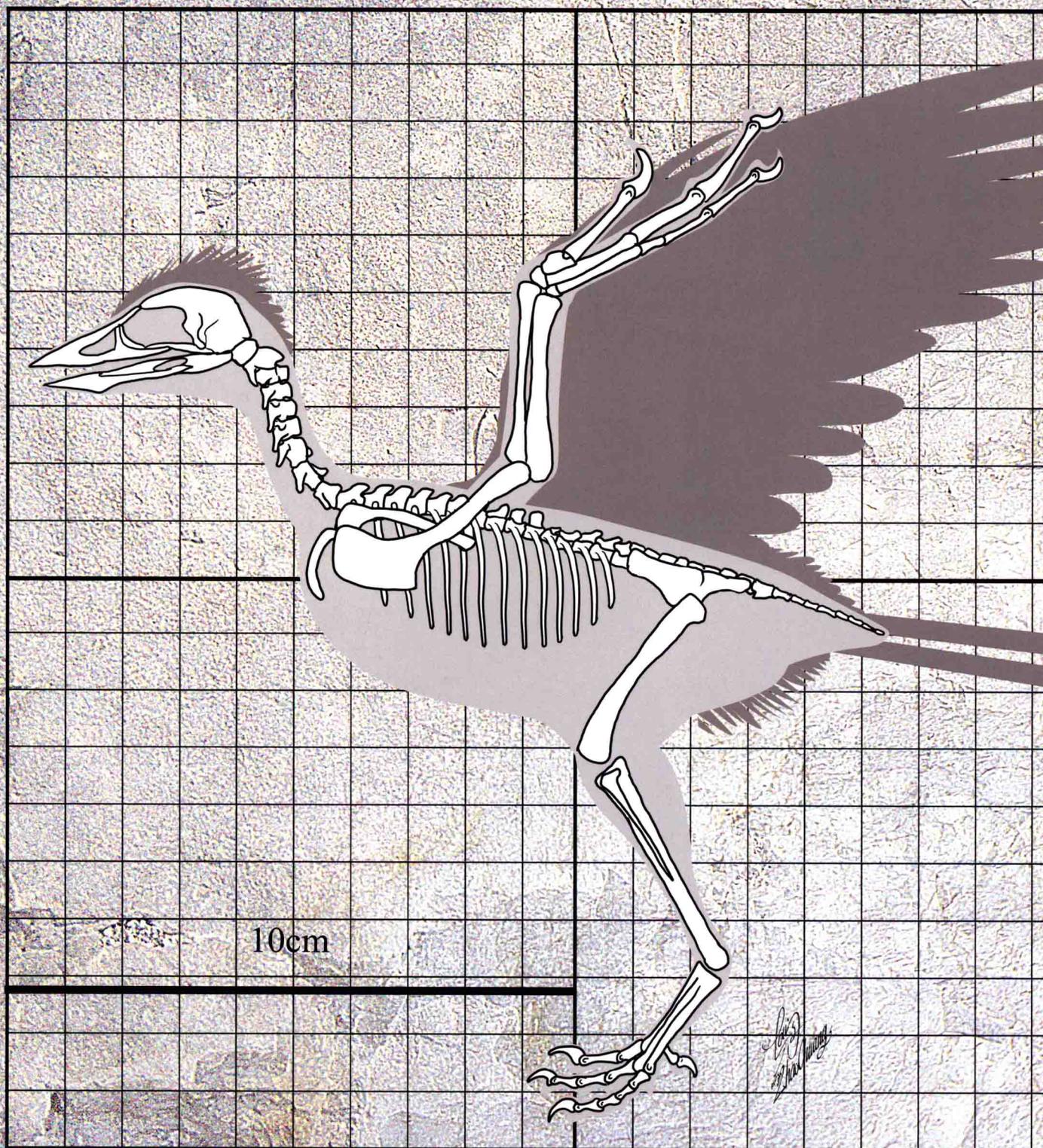
First Described by: Lianhai Hou, Zhonghe Zhou, Yucui Gu, He Zhang



© 2012
The Art of
The Game

Confuciusornis sanctus Hou et al., 1995

Eoconfuciusornis zhengi Zhang, Zhou et Benton, 2008



蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanuræ

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

鸟翼类 Avialae

中文名称: 郑氏始孔子鸟

学名: *Eoconfuciusornis zhengi* Zhang, Zhou et Benton, 2008

释义: 属名意为“比孔子鸟原始”。
种名献给中国鸟类学家郑光美。

大小: 体长约 0.17m

食性: 杂食

生存年代: 早白垩世, 距今 1.31 亿年

化石产地: 中国河北

命名: 张福成, 周忠和, Michael Benton

Taxonomic Name: *Eoconfuciusornis zhengi* Zhang, Zhou et Benton, 2008

Etymology: The generic name means "more primitive than *Confuciusornis*".

The specific name is dedicated to Chinese ornithologist Guangmei Zheng.

Body Size: around 0.17 meters long

Diet: Omnivore

Age: the Early Cretaceous, approximately 131 million years ago

Locality: Hebei, China

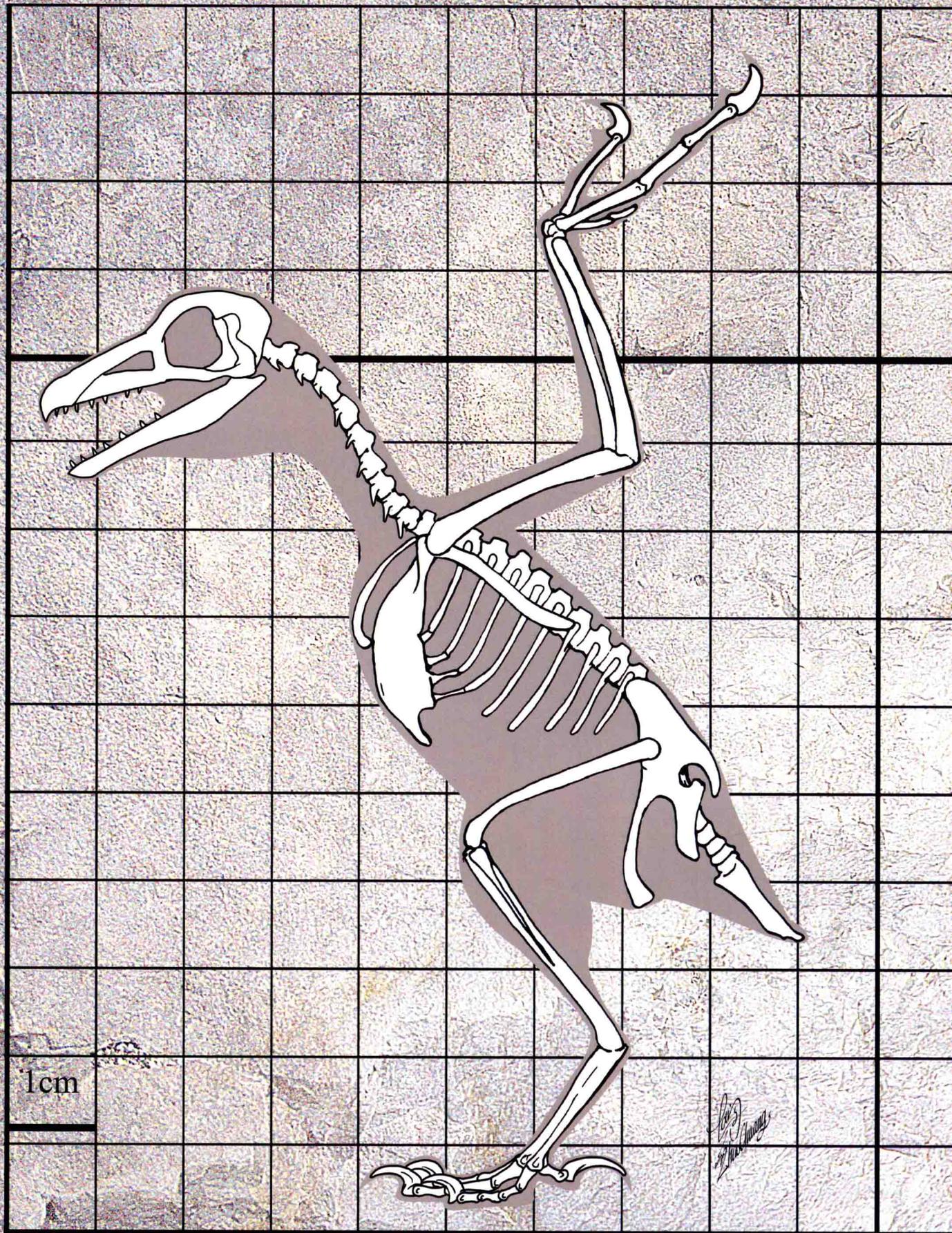
First Described by: Fucheng Zhang, Zhonghe Zhou, Michael Benton

Eoconfuciusornis zhengi Zhang, Zhou et Benton, 2008





© 2011
Michael W. Young



1cm

蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

鸟翼类 Avialae

中文名称：三塔中国鸟

学名：*Sinornis santensis* Sereno et Rao, 1992

释义：属名意为“中国的鸟”。

种名指化石产地朝阳市内的3座古塔。

大小：体长约0.11m

食性：杂食

生存年代：早白垩世，距今1.2亿年~1亿年

化石产地：中国辽宁

命名人：Paul Sereno, 饶成刚

Taxonomic Name: *Sinornis santensis* Sereno et Rao, 1992

Etymology: The generic name means "China bird"

The specific name refers to three towers located in the Chaoyang city.

Body Size: around 0.11 meters long

Diet: Omnivore

Age: the Early Cretaceous, approximately 120 to 100 million years ago

Locality: Liaoning, China

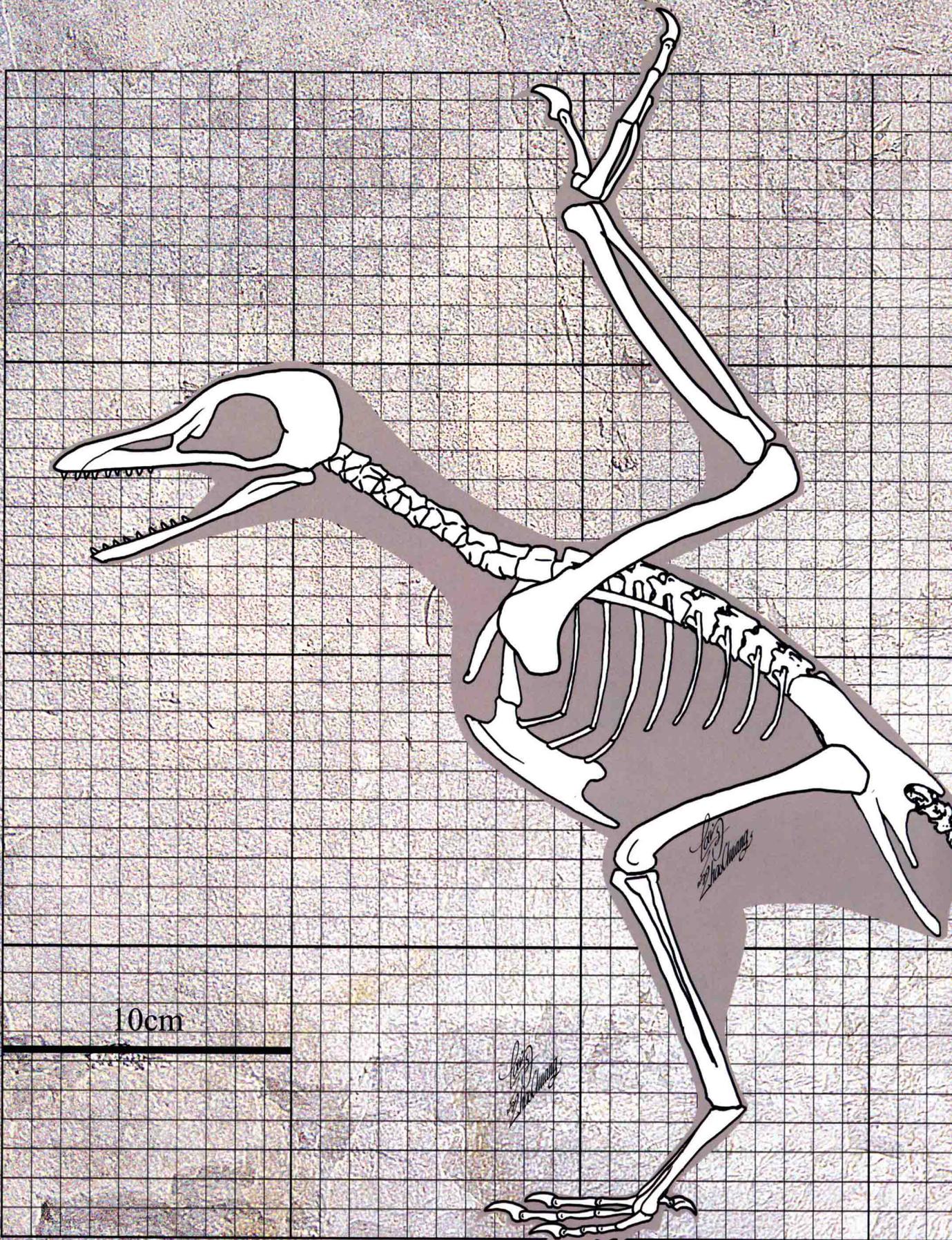
First Described by: Paul Sereno, Chenggang Rao

Sinornis santensis Sereno et Rao, 1992



Sinornis santensis Sereno et Rao, 1992

1992
Sereno et Rao



10cm

蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanuræ

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

鸟翼类 Avialae



Cathayornis yandica Zhou et al., 1992



Cathayornis yandica Zhou et al., 1992

中文名称：燕都华夏鸟

学名：*Cathayornis yandica* Zhou et al., 1992

释义：属名意为“华夏的鸟”，华夏是中国大地的古称。

种名意指化石产地朝阳古时属燕国。

大小：体长约 0.33m

食性：杂食

生存年代：早白垩世

化石产地：中国辽宁

命名人：周忠和等

Taxonomic Name: *Cathayornis yandica* Zhou et al., 1992

Etymology: The generic name is derived from ancient name of China.

The specific name refers to ancient name of Chaoyang.

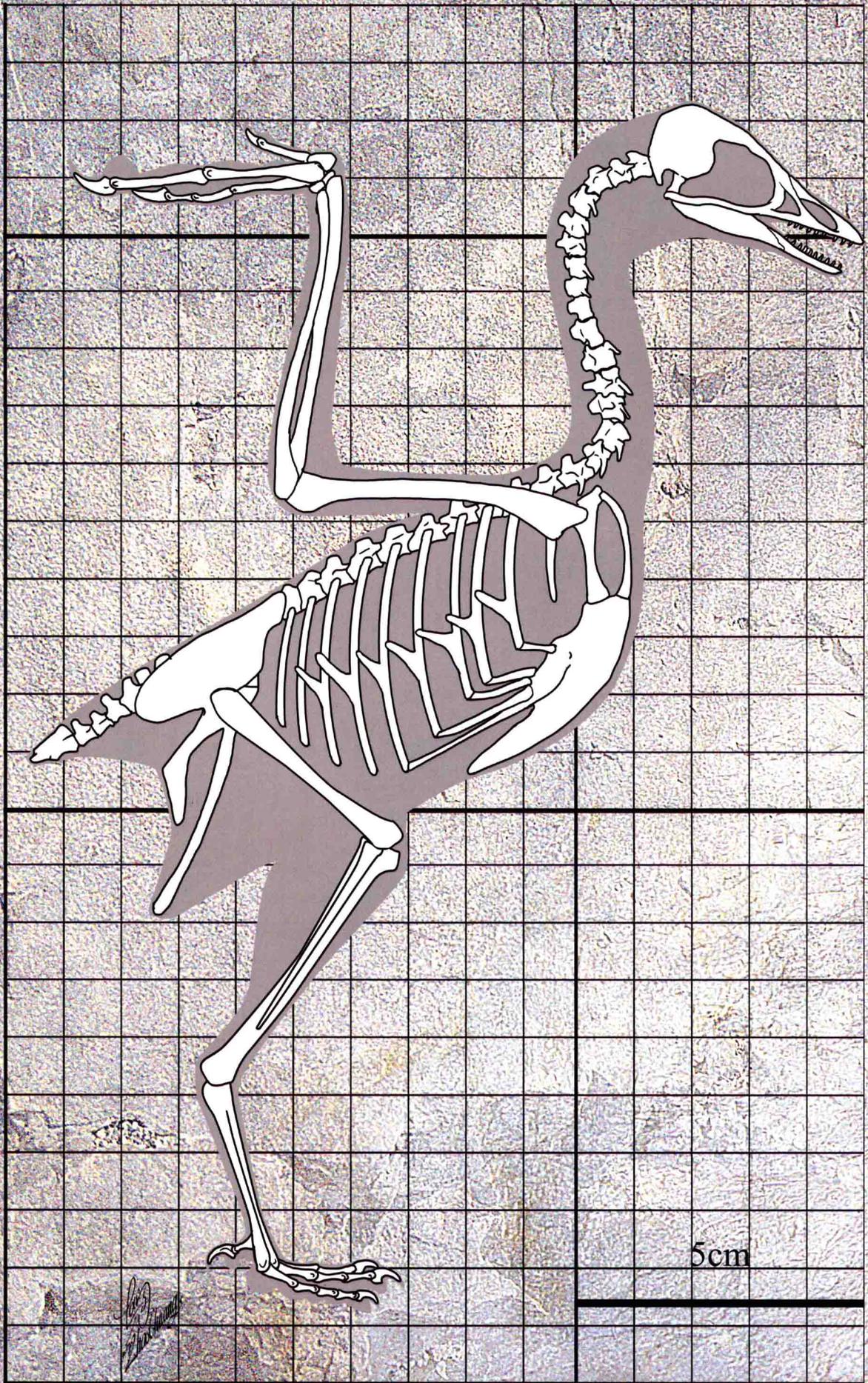
Body Size: around 0.33 meters long

Diet: Omnivore

Age: the Early Cretaceous

Locality: Liaoning, China

First Described by: Zhonghe Zhou etc



5cm

蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

鸟翼类 Avialae

中文名称：北山朝阳鸟

学名：*Chaoyangia beishanensis* Hou et Zhang, 1993

释义：属名意为“朝阳的鸟”。

种名指坐落于化石产地的北山。

大小：体长约 0.15m

食性：杂食

生存年代：早白垩世，距今约 1.2 亿年

化石产地：中国辽宁

命名人：侯连海，张江永

Taxonomic Name: *Chaoyangia beishanensis* Hou et Zhang, 1993

Etymology: The generic name refers to fossil locality.

The specific name refers to the Beishan mountain where fossil located.

Body Size: around 0.15 meters long

Diet: Omnivore

Age: the Early Cretaceous, approximately 120 million years ago

Locality: Liaoning, China

First Described by: Lianhai Hou, Jiangyong Zhang

Chaoyangia beishanensis Hou et Zhang, 1993

Chaoyangia beishanensis Hou et Zhang, 1993



Chaoyangia beishanensis
Hou et Zhang, 1993



Liaoxiornis delicates Hou et Chen, 1999

中文名称：娇小辽西鸟

学名：*Liaoxiornis delicates* Hou et Chen, 1999

释义：属名意为“来自辽西的鸟”。

种名意为“娇小的”。

大小：头骨长约 0.024m，脊椎长约 0.065m，尾长约 0.025m

食性：杂食

生存年代：早白垩世

化石产地：中国辽宁

命名者：侯连海，陈丕基

Taxonomic Name: *Liaoxiornis delicates* Hou et Chen, 1999

Etymology: The generic name shows the locality where the fossil was collected.

The specific name means "petite".

Body Size: skull length 0.024 meters, spinal length 0.065 meters, Coccoygeal length 0.025 meters

Diet: Omnivore

Age: the Early Cretaceous

Locality: Liaoning, China

First Described by: Lianhai Hou, Peiji Chen

蜥臀目 Saurischia

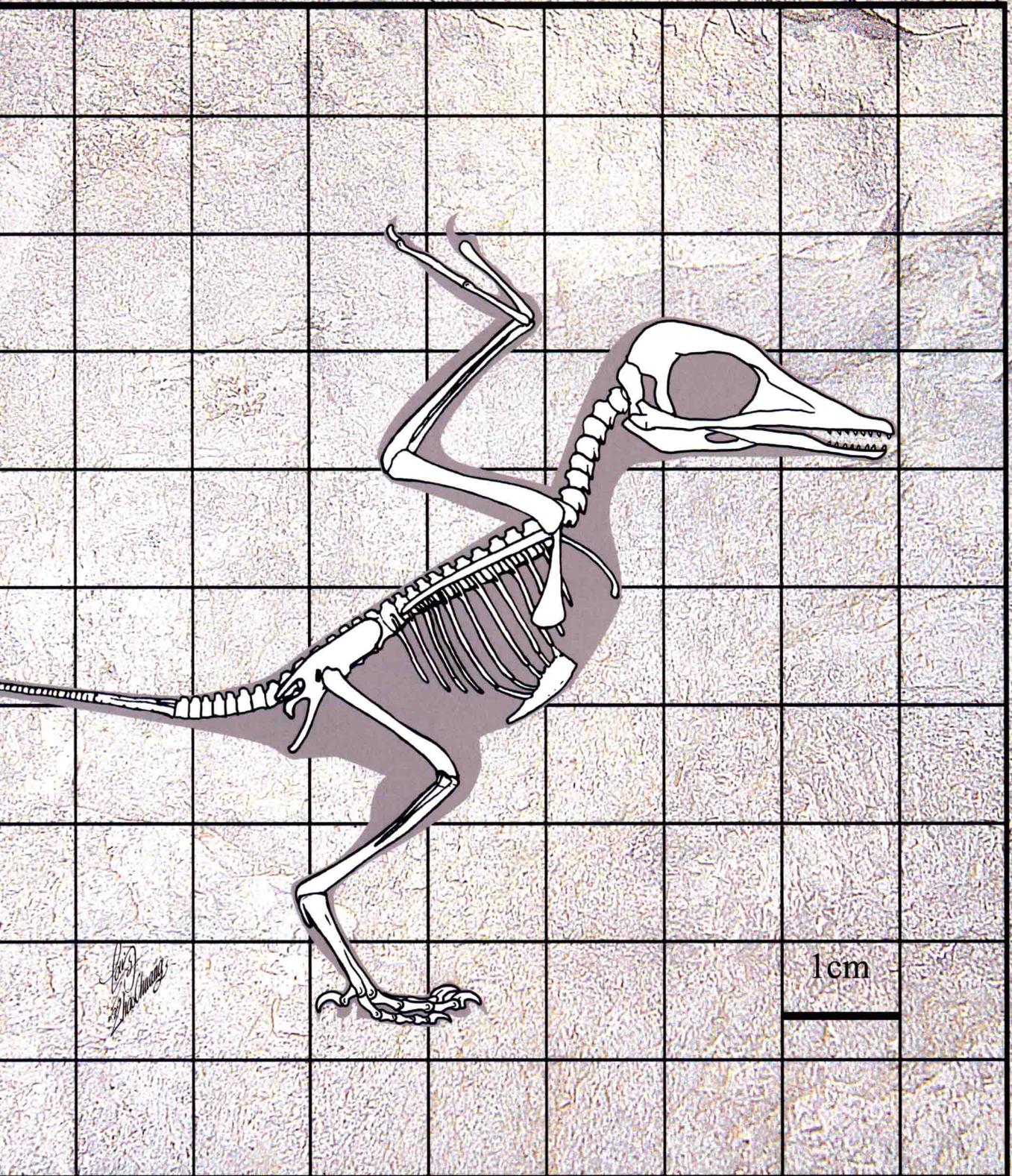
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

鸟翼类 Avialae

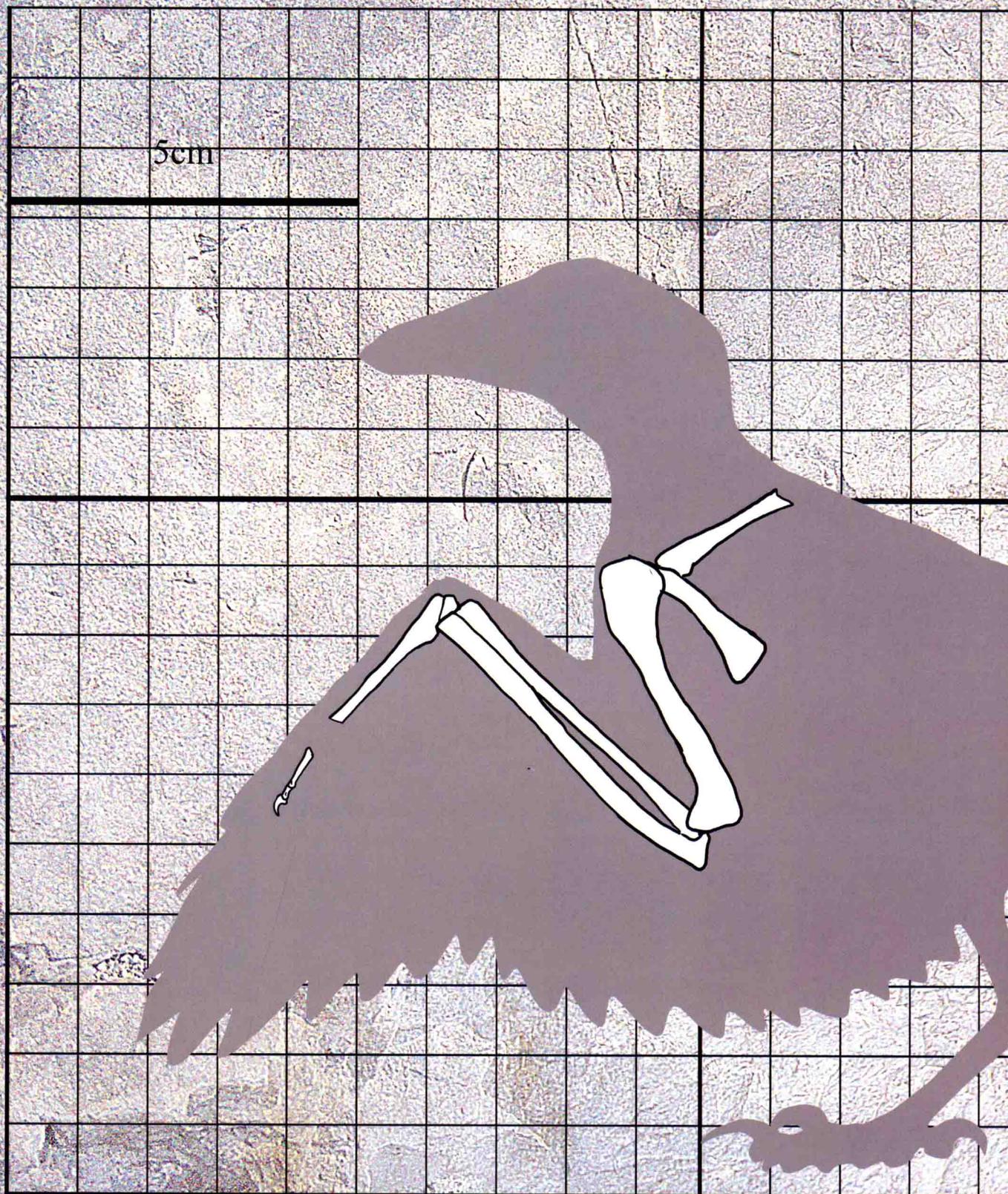




Liaoxiornis delicates Hou et Chen, 1999



Otogornis genghisi Hou, 1994



蜥臀目 Saurischia

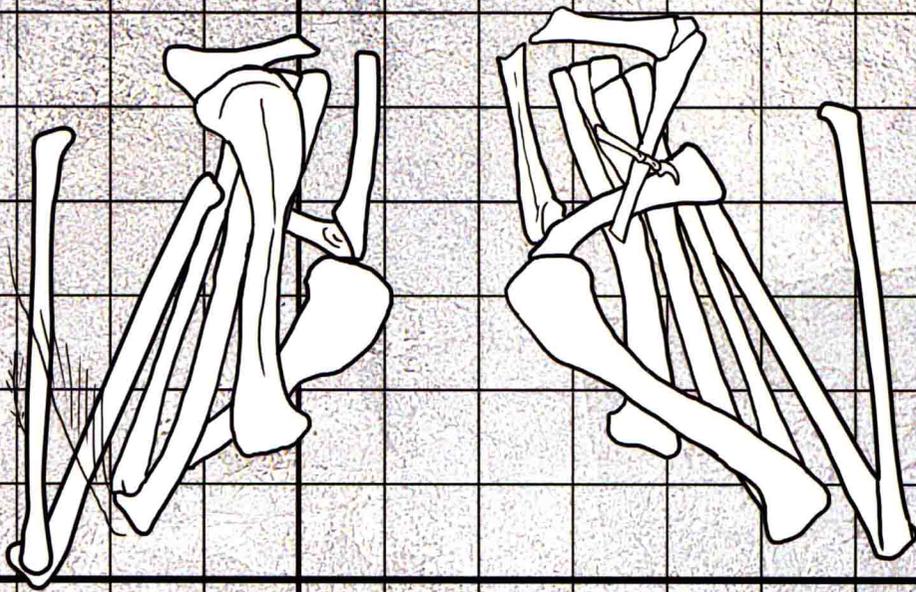
兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

鸟翼类 Avialae



中文名称：成吉思汗鄂托克鸟

学名：*Otogornis genghisi* Hou, 1994

释义：属名意为“来自鄂托克的鸟”，指其化石发现地中国内蒙古自治区鄂托克旗。种名赠给蒙古族杰出首领成吉思汗。

大小：体长约 0.14m

食性：杂食

生存年代：早白垩世

化石产地：中国内蒙古

命名者：侯连海

Taxonomic Name: *Otogornis genghisi* Hou, 1994

Etymology: The generic name is from the place where the fossil was collected.

The specific name is from the emperor of ancient Yuan Dynasty.

Body Size: around 0.14 meters long

Diet: Omnivore

Age: the Early Cretaceous

Locality: Inner Mongolia, China

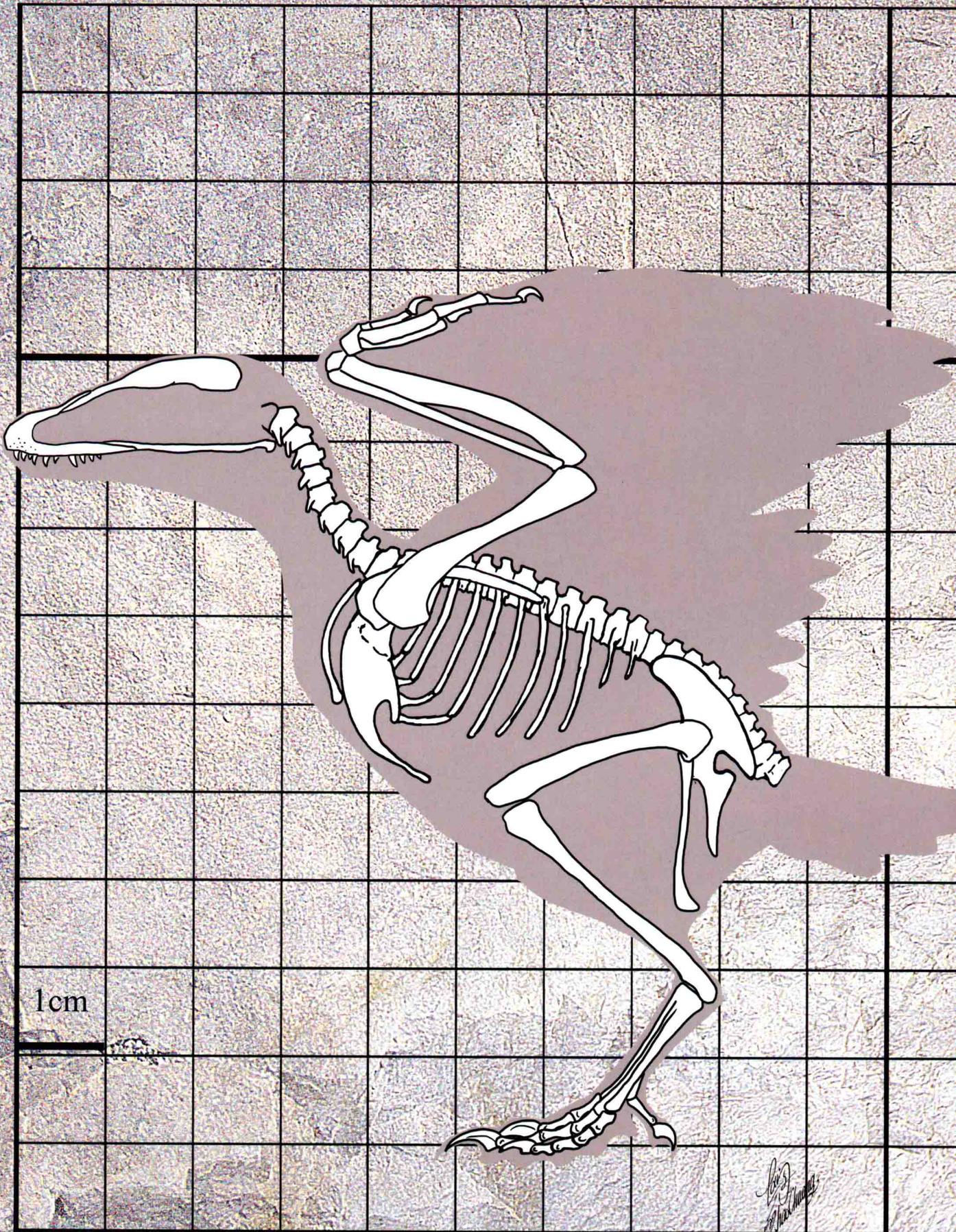
First Described by: Lianhai Hou

Otogornis genghisi Hou, 1994





Art by
@TheDragonArtist



1cm

[Handwritten signature]

蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

鸟翼类 Avialae

中文名称：步氏始反鸟

学名：*Eoenantiornis buhleri* Hou et al, 1999

释义：属名意为“原始的反鸟”。

种名献给已故德国著名古鸟类及形态学家 Paul Buhler。

大小：体长约 0.11m

食性：杂食

生存年代：早白垩世

化石产地：中国辽宁

命名人：侯连海等

Taxonomic Name: *Eoenantiornis buhleri* Hou et al, 1999

Etymology: The generic name means "primitive Enantiornithes".

The specific name is dedicated to late German paleornithologist P. Buhler.

Body Size: around 0.11 meters long

Diet: Omnivore

Age: the Early Cretaceous

Locality: Liaoning, China

First Described by: Lianhai Hou etc

Eoenantiornis buhleri Hou et al, 1999

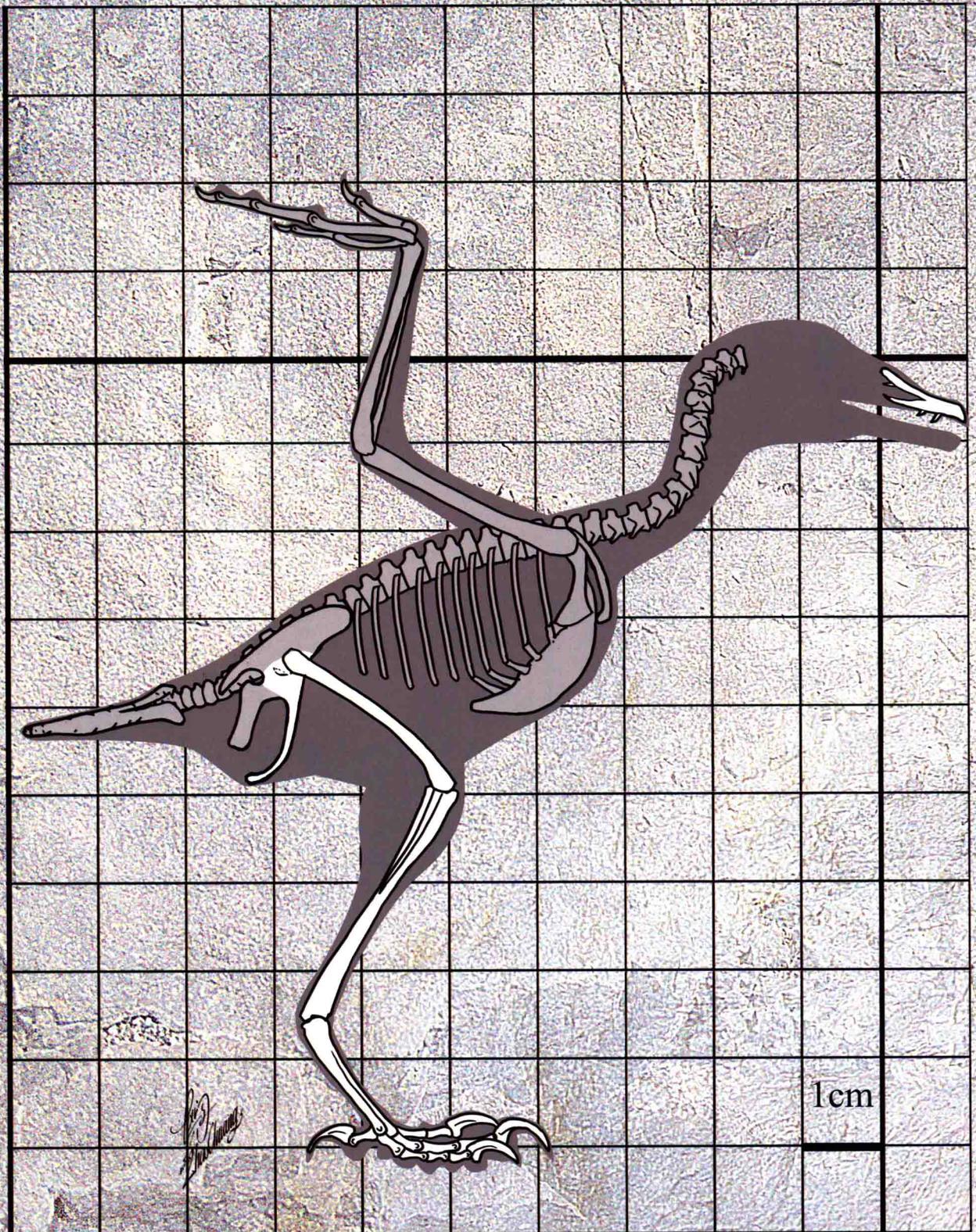
Eoenantiornis buhleri Hou et al, 1999





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Boluochia zhengi Zhou, 1995



蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

鸟翼类 Avialae



Boluochia zhengi Zhou, 1995

中文名称：郑氏波罗赤鸟

学名：*Boluochia zhengi* Zhou, 1995

释义：属名意为“来自波罗赤的鸟”。

种名献给已故鸟类学家郑作新院士。

大小：体长约 0.11m

食性：杂食

生存年代：早白垩世

化石产地：中国辽宁

命名人：周忠和

Taxonomic Name: *Boluochia zhengi* Zhou, 1995

Etymology: The generic name is derived from the place where the fossil was collected.

The specific name is dedicated to late distinguished Chinese ornithologist Zhengzuoxin.

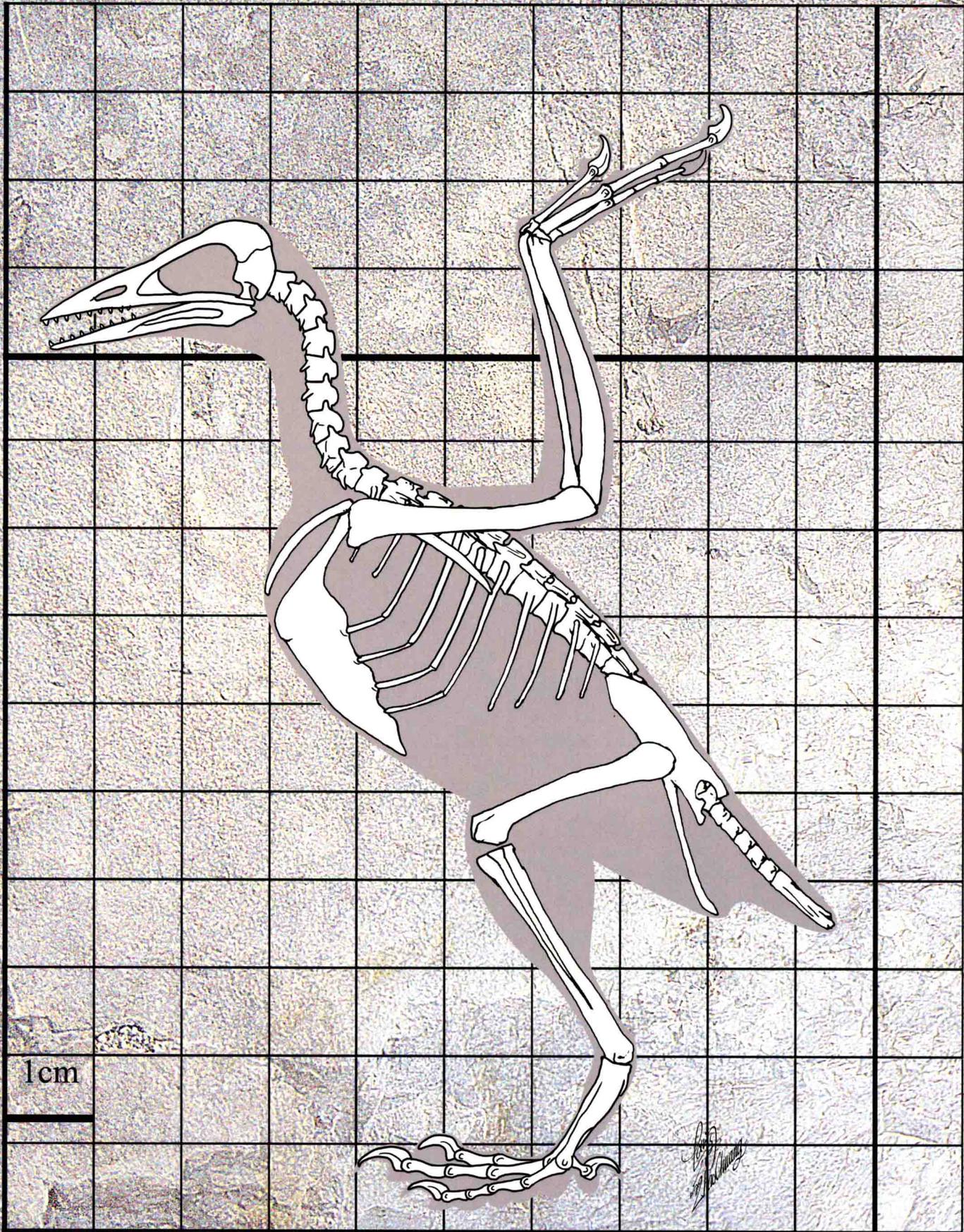
Body Size: around 0.11 meters long

Diet: Omnivore

Age: the Early Cretaceous

Locality: Liaoning, China

First Described by: Zhonghe Zhou



蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

鸟翼类 Avialae

Liaoningornis longidigitus Hou, 1996



*© 2013
Michael Thompson*

Liaoningornis longidigitus Hou, 1996

中文名称：长趾辽宁鸟

学名：*Liaoningornis longidigitus* Hou, 1996

释义：属名意为“来自辽宁的鸟”。

种名指其趾骨特别长。

大小：体长约 0.11m

食性：杂食

生存年代：早白垩世

化石产地：中国辽宁

命名人：侯连海

Taxonomic Name: *Liaoningornis longidigitus* Hou, 1996

Etymology: The generic name means "Liaoning bird".

The specific name refers to its long phalanx.

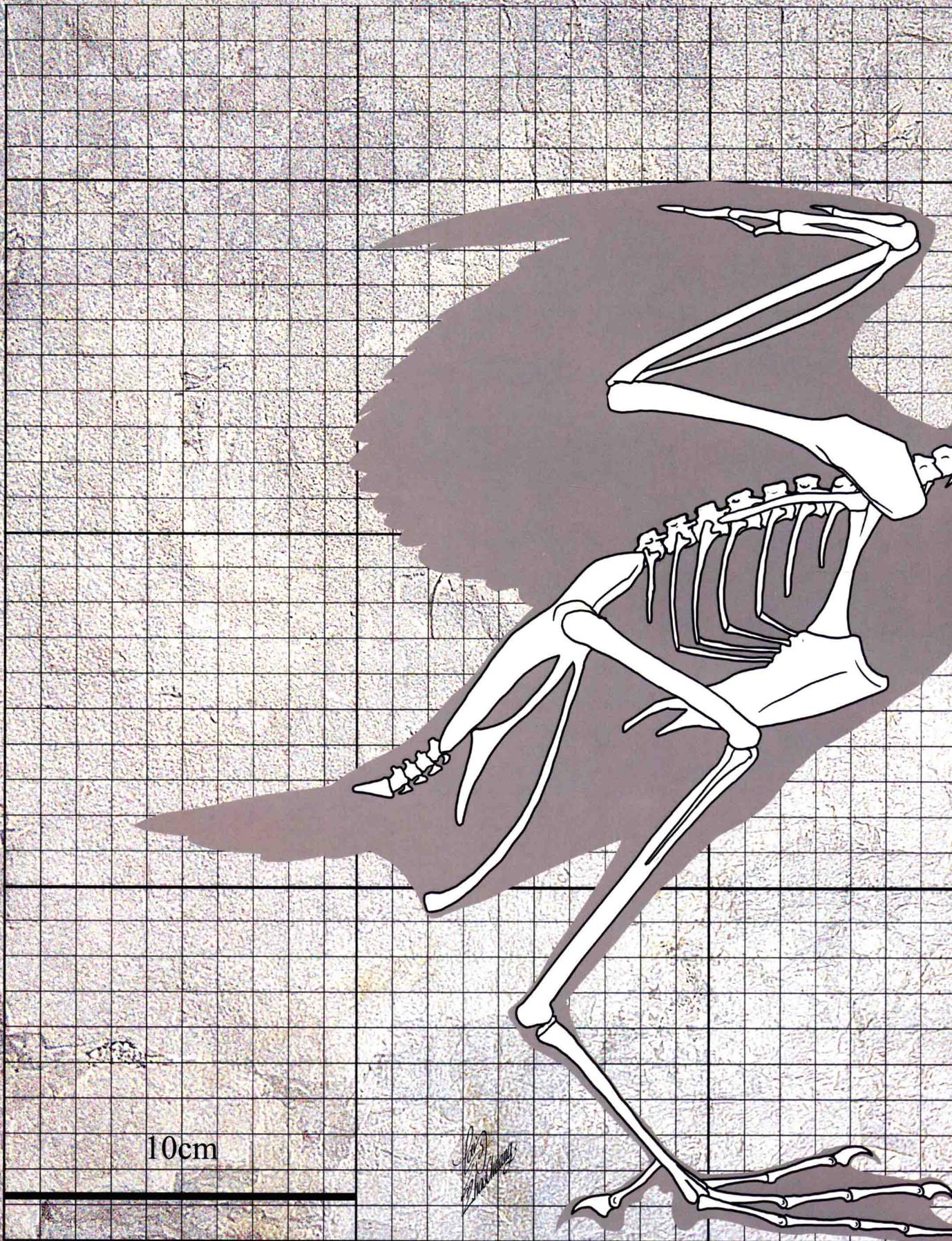
Body Size: around 0.11 meters long

Diet: Omnivore

Age: the Early Cretaceous

Locality: Liaoning, China

First Described by: Lianhai Hou



10cm

蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

鸟翼类 Avialae



Gansus yumenensis Hou et Liu, 1984



Gansus yumenensis Hou et Liu, 1984

中文名称：玉门甘肃鸟

学名：*Gansus yumenensis* Hou et Liu, 1984

释义：属名意为“来自甘肃的鸟”。

种名是化石产地甘肃省玉门市。

大小：体长约 0.3m

食性：鱼

生存年代：早白垩世

化石产地：中国甘肃

命名人：侯连海，刘智成

Taxonomic Name: *Gansus yumenensis* Hou et Liu, 1984

Etymology: The generic name means "Gansu Bird".

The specific name refers to the area where fossil loacted.

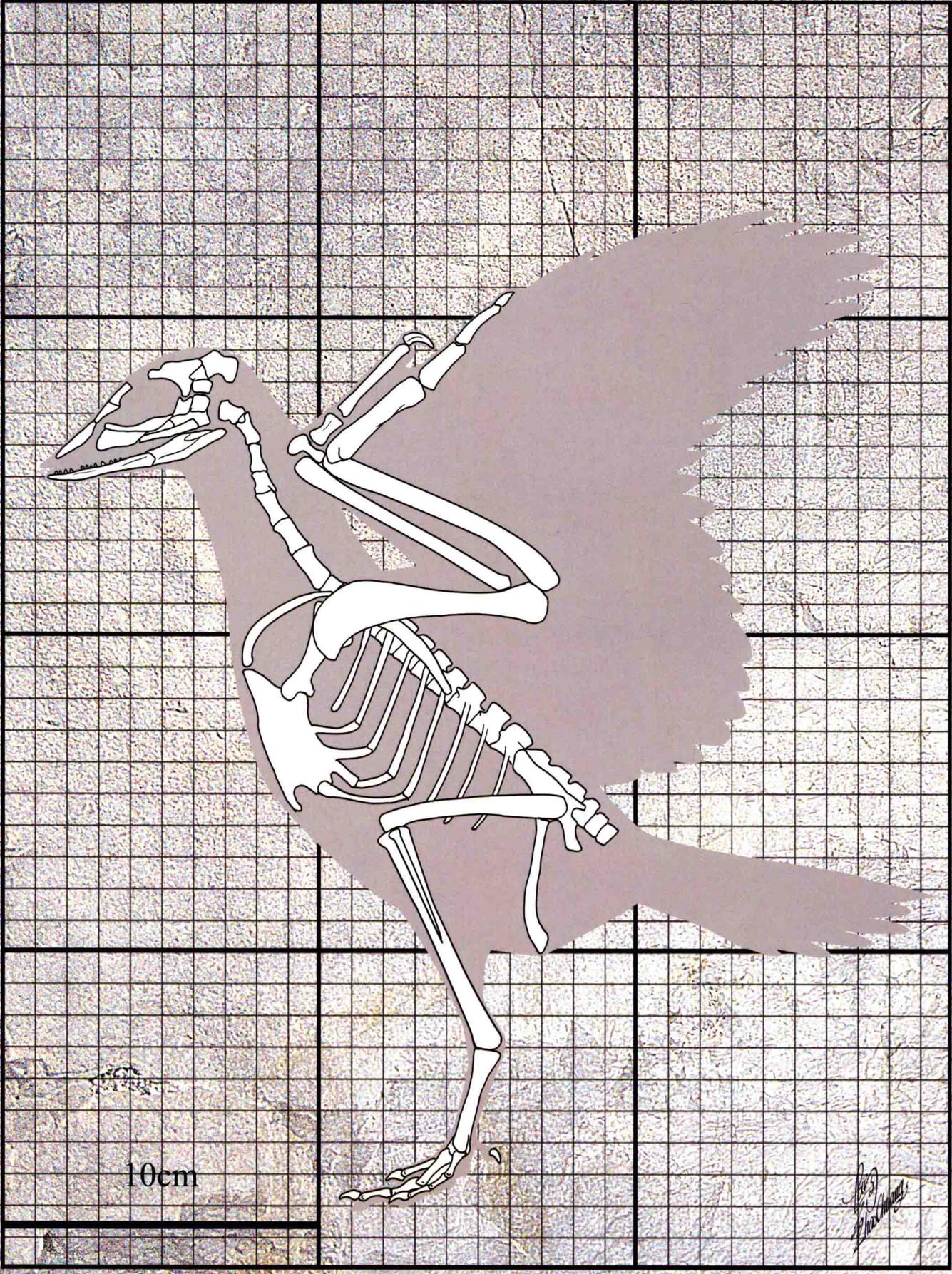
Body Size: around 0.3 meters long

Diet: Fish

Lived Period: the Early Cretaceous

Origin of Fossils: Gansu, China

Nomenclator: Lianhai Hou, Zhicheng Liu



蜥臀目 Saurischia

兽脚亚目 Theropoda

坚尾龙类 Tetanurae

虚骨龙类 Coelurosauria

手盗龙形类 Maniraptoriformes

鸟翼类 Avialae

Jianchangornis microdontagen Zhou et al., 2009



Jianchangornis microdontagen Zhou et al., 2009

中文名称：小齿建昌鸟

学名：*Jianchangornis microdontagen* Zhou et al., 2009

释义：属名意思为“来自建昌的鸟”。

种名指其细小的牙齿。

大小：体长约 0.27m

食性：鱼

生存年代：早白垩世

化石产地：中国辽宁

命名者：周忠和，张福成，李志恒

Taxonomic Name: *Jianchangornis microdontagen* Zhou et al., 2009

Etymology: The genus name refers to Jianchang where fossil is found.

The specific name refers to its small teeth.

Body Size: around 0.27 meters long

Diet: Fish

Lived Period: the Early Cretaceous

Origin of Fossils: Liaoning, China

Nomenclator: Zhonghe Zhou, Fucheng Zhang, Zhiheng Li

蜥脚形亚目

蜥脚形亚目 (Sauropodomorpha) 是蜥臀目的另一个演化支，是生存于中三叠世至晚白垩世的优势植食性恐龙类群。它们由最初的体型较小的、能够两足行走的个体演化成体型庞大、四足行走、拥有长颈和长尾的个体，最终成为地球上出现过的最大的陆地动物类群。

蜥脚形亚目包含两个演化支：原蜥脚下目 (Prosauropoda) 和蜥脚下目 (Sauropoda)。原蜥脚下目的生存时间较早，但是于侏罗纪时都已灭亡。它们的体型都较小，而且能够两足行走。蜥脚下目的出现时间虽晚于原蜥脚下目，但是它们一直生存到晚白垩世。蜥脚下目成员体型都很庞大，脑袋小而轻，颈部很长（其成年个体的颈椎数量通常会超过 10 节），尾巴也很长。它们拥有大型的鼻孔及拇指上大型的指爪。

曾经很长一段时间以来，研究人员都认为原蜥脚下目是蜥脚下目的祖先，但是近年来的观点认为，它们是两个相互平行的演化支。

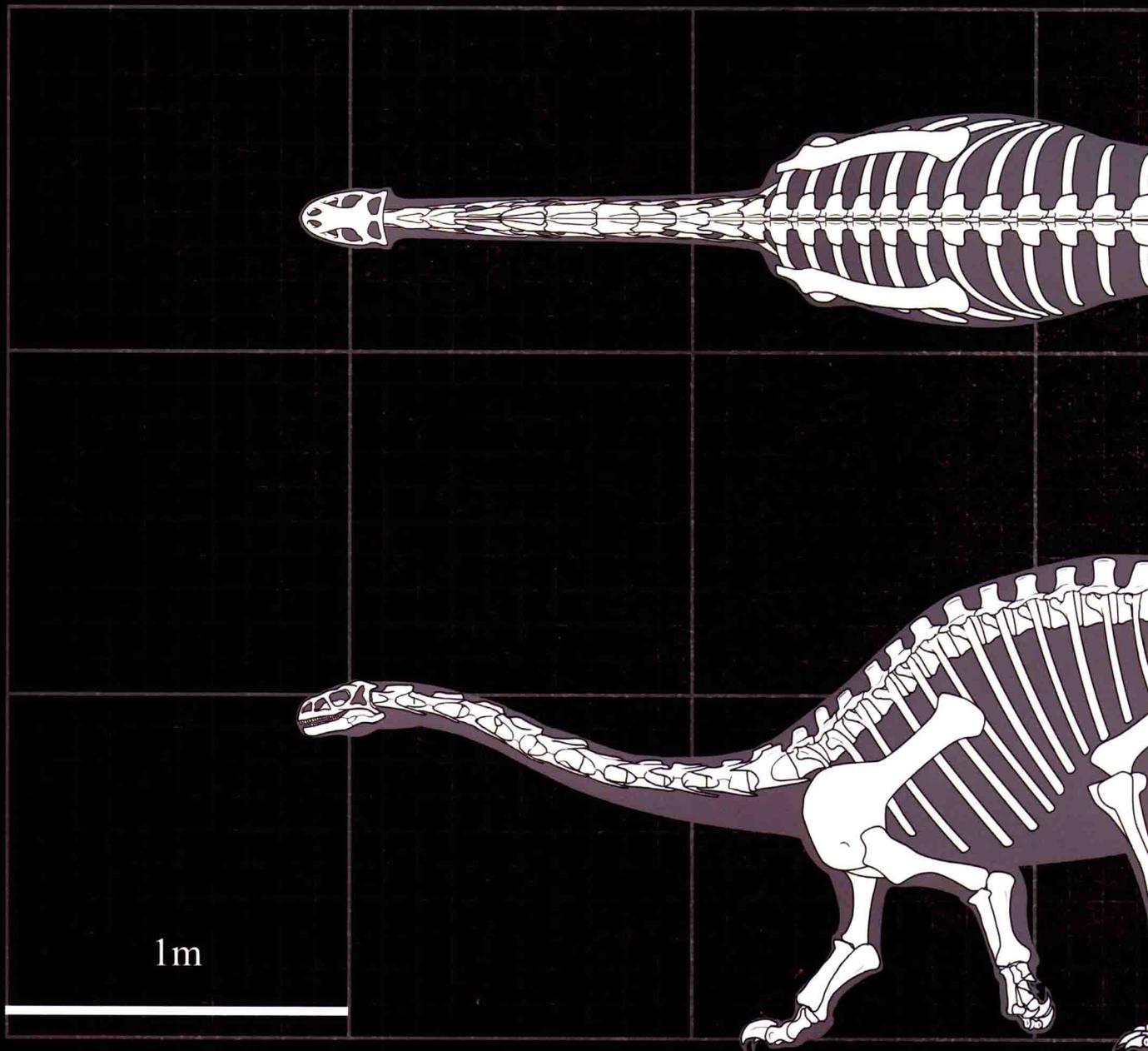
蜥脚形亚目的成员全部以植物为食，但是它们类似树叶状的牙齿并不强劲。它们不能用牙齿来磨碎食物，而只能借助吞食胃石来消化坚硬的植物纤维。

Sauropodomorpha

The Sauropodomorpha is the other evolutionary branch of the Saurischia, and the dominant herbivorous dinosaur group from the Middle Triassic to Late Cretaceous. The sauropodomorphs evolved from their small bipedal beginnings to the gigantic, quadrupedal dinosaurs with long necks and long tails, eventually becoming the largest land animal group ever known on earth. The Sauropodomorpha contains two evolutionary branches, i.e., the Prosauropoda and the Sauropoda. The Prosauropoda appeared early and disappeared in the Jurassic. Prosauropods were small and bipedal. Sauropoda appeared later than the Prosauropoda but lived well into the Late Cretaceous. Sauropods are all huge or even gigantic dinosaurs, with small and light brains, very long necks (usually having more than 10 cervical vertebrae) and very long tails. They also have large nostrils and large sharp claws on their thumbs.

For a long time, the Prosauropoda used to be considered ancestral to the Sauropoda. However, in recent years, they are regarded as two different branches evolving in parallel. All sauropodomorphs were herbivorous, and their leaf-like teeth were not powerful enough to grind food and instead they swallowed stones to help digest hard plant fibers.

Lufengosaurus hueni Young, 1941



中文名称：许氏禄丰龙

学名：*Lufengosaurus hueni* Young, 1941

释义：属名意为“禄丰的蜥蜴”。

种名献给德国专家许耐，以感谢他对禄丰龙研究工作的热情帮助。

大小：体长 5~7m

食性：植食

生存年代：早侏罗世，距今约 1.9 亿年

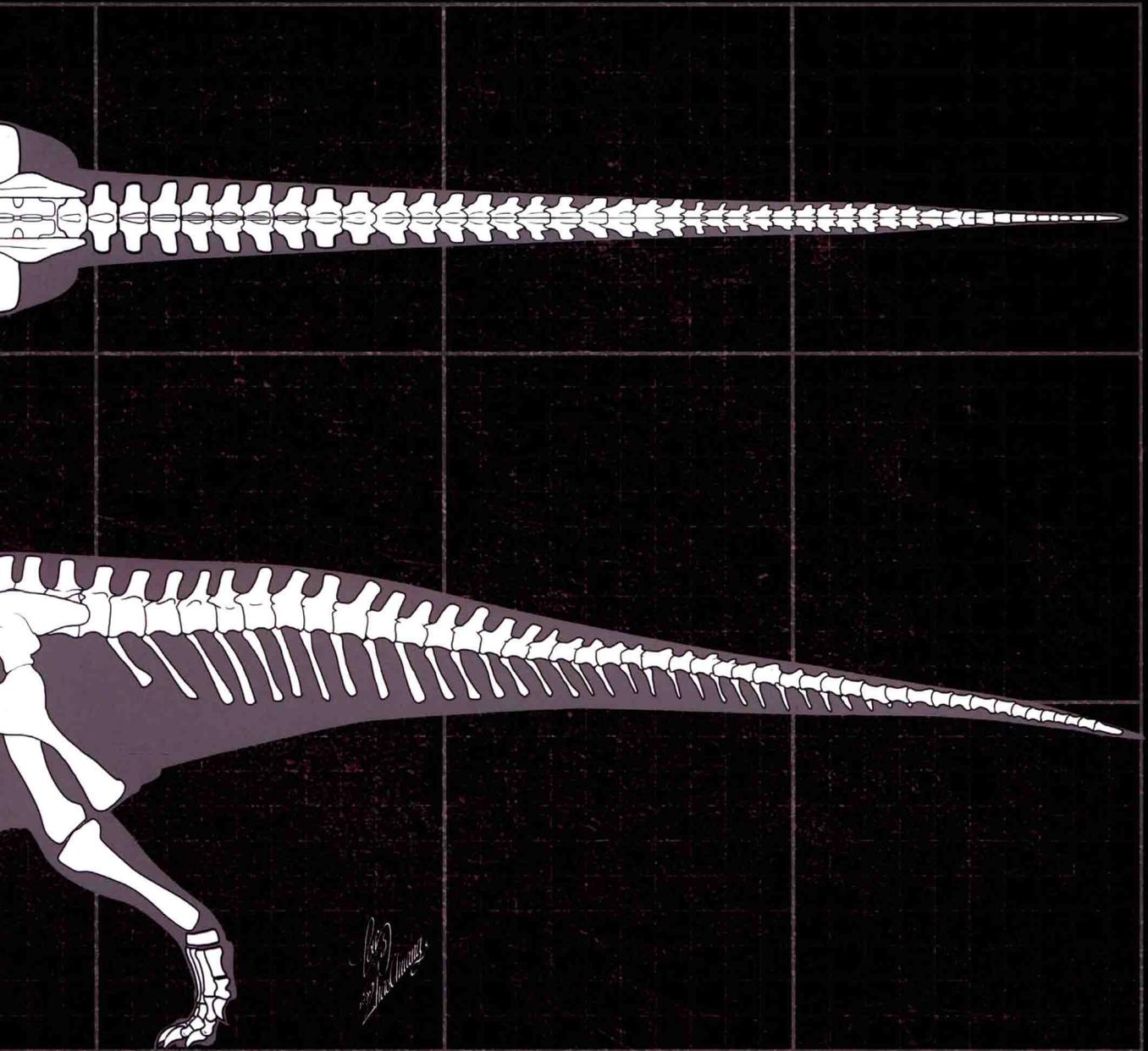
化石产地：中国云南

命名者：杨钟健

蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

原蜥脚下目 Prosauropoda



Taxonomic Name: *Lufengosaurus huenei* Young, 1941

Etymology: The generic name means "Lufeng lizard".

The specific name honours German specialist Mr. Hue, who helped the study of *Lufengosaurus* enthusiastically.

Body Size: around 5 to 7 meters long

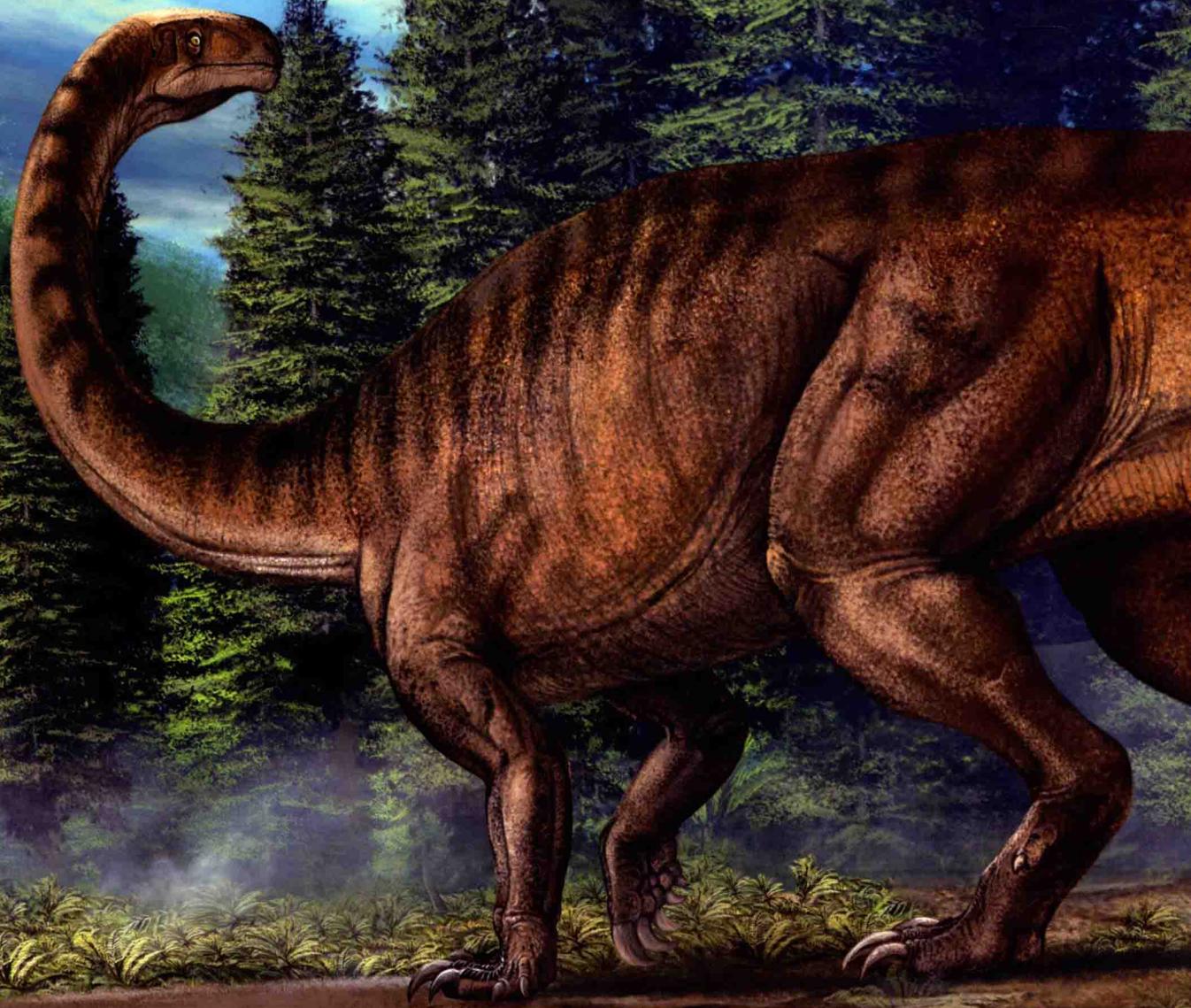
Diet: Herbivore

Age: the Early Jurassic, approximately 190 million years ago

Locality: Yunnan, China

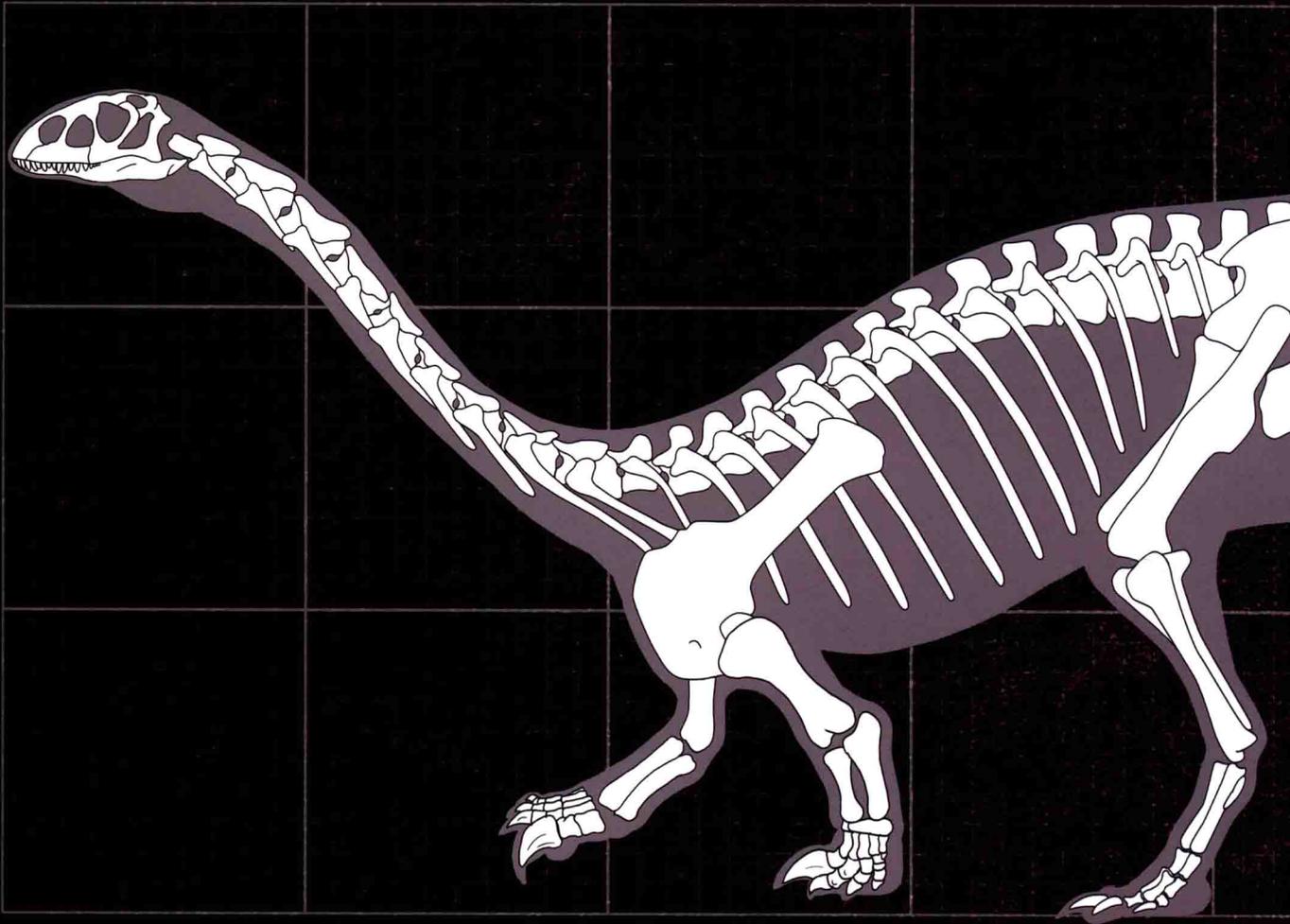
First Described by: Zhongjian Yang

Lufengosaurus hueni Young, 1941





Jingshanosaurus xinwaensis Zhang et Yang, 1995



中文名称：新洼金山龙

学名：*Jingshanosaurus xinwaensis* Zhang et Yang, 1995

释义：属名意为“金山的蜥蜴”。

种名意指其化石发现地新洼村。

大小：体长约 8.7m

食性：植食

生存年代：早侏罗世至中侏罗世

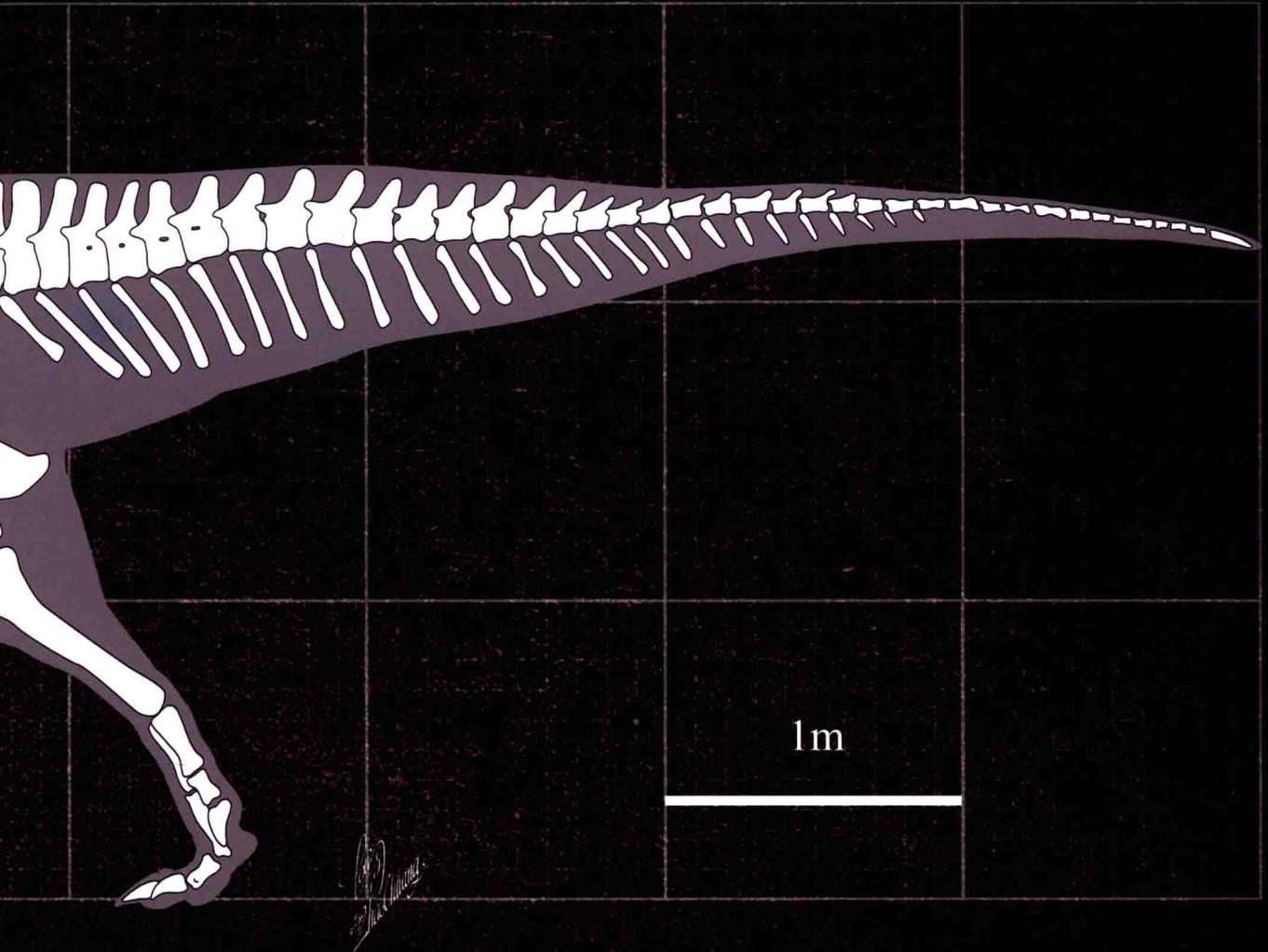
化石产地：中国云南

命名者：张奕宏，杨兆龙

蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

原蜥脚下目 Prosauropoda



Taxonomic Name: *Jingshanosaurus xinwaensis* Zhang et Yang, 1995

Etymology: The generic name means "Jingshan lizard".

The specific name refers to the Xinwa village where the fossil remains were found.

Body Size: around 8.7 meters long

Diet: Herbivore

Age: the Early to Middle Jurassic

Locality: Yunnan, China

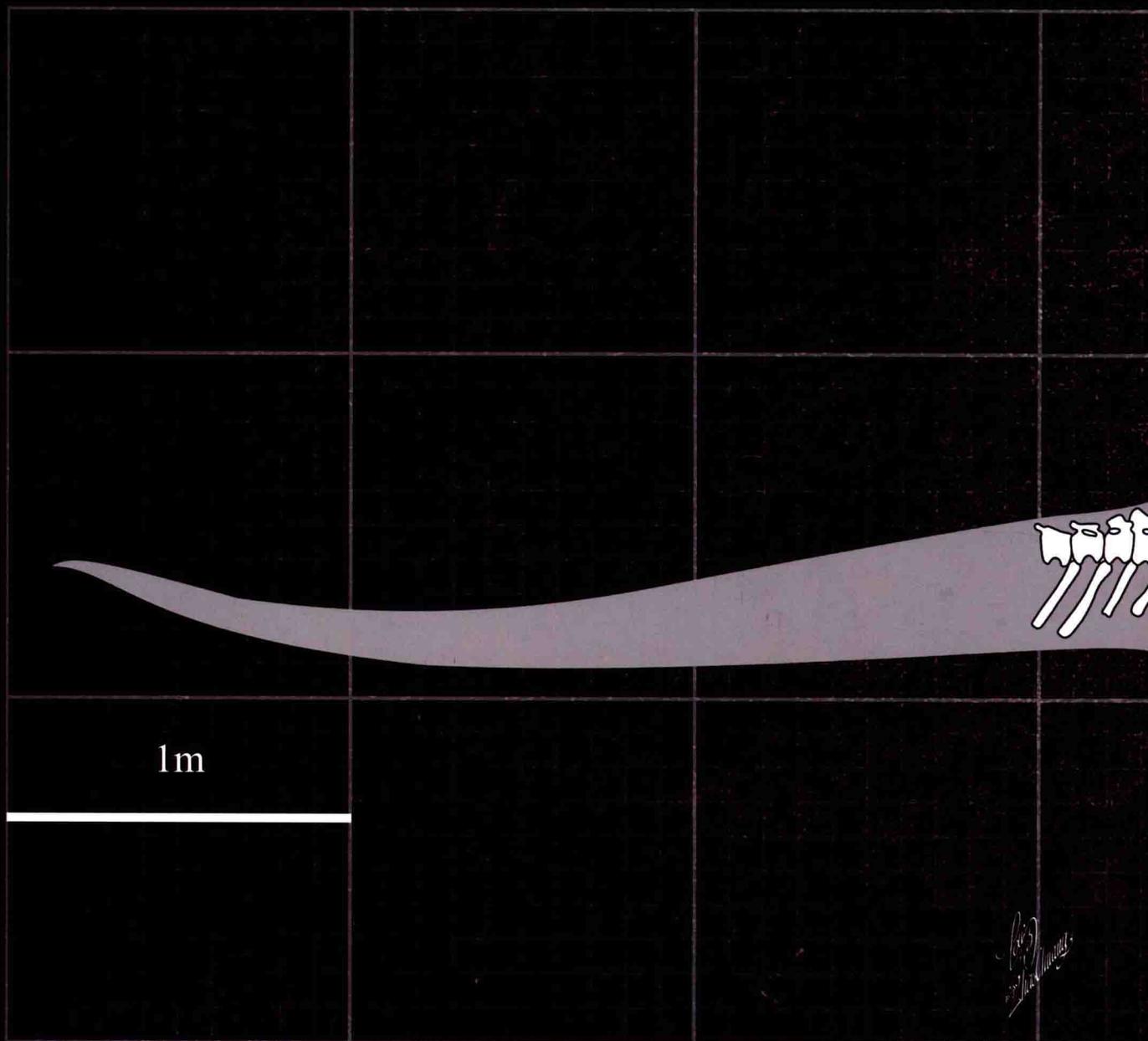
First Described by: Yihong Zhang, Zhaolong Yang

Jingshanosaurus xinwaensis Zhang et Yang, 1995





Yunnanosaurus huangi Young, 1942



中文名称：黄氏云南龙

学名：*Yunnanosaurus huangi* Young, 1942

释义：属名意为“云南的蜥蜴”。

种名献给著名地质学家黄汲清院士。

大小：体长 5~7m，高 2~3m

食性：植食

生存年代：早侏罗世，距今约 1.9 亿年

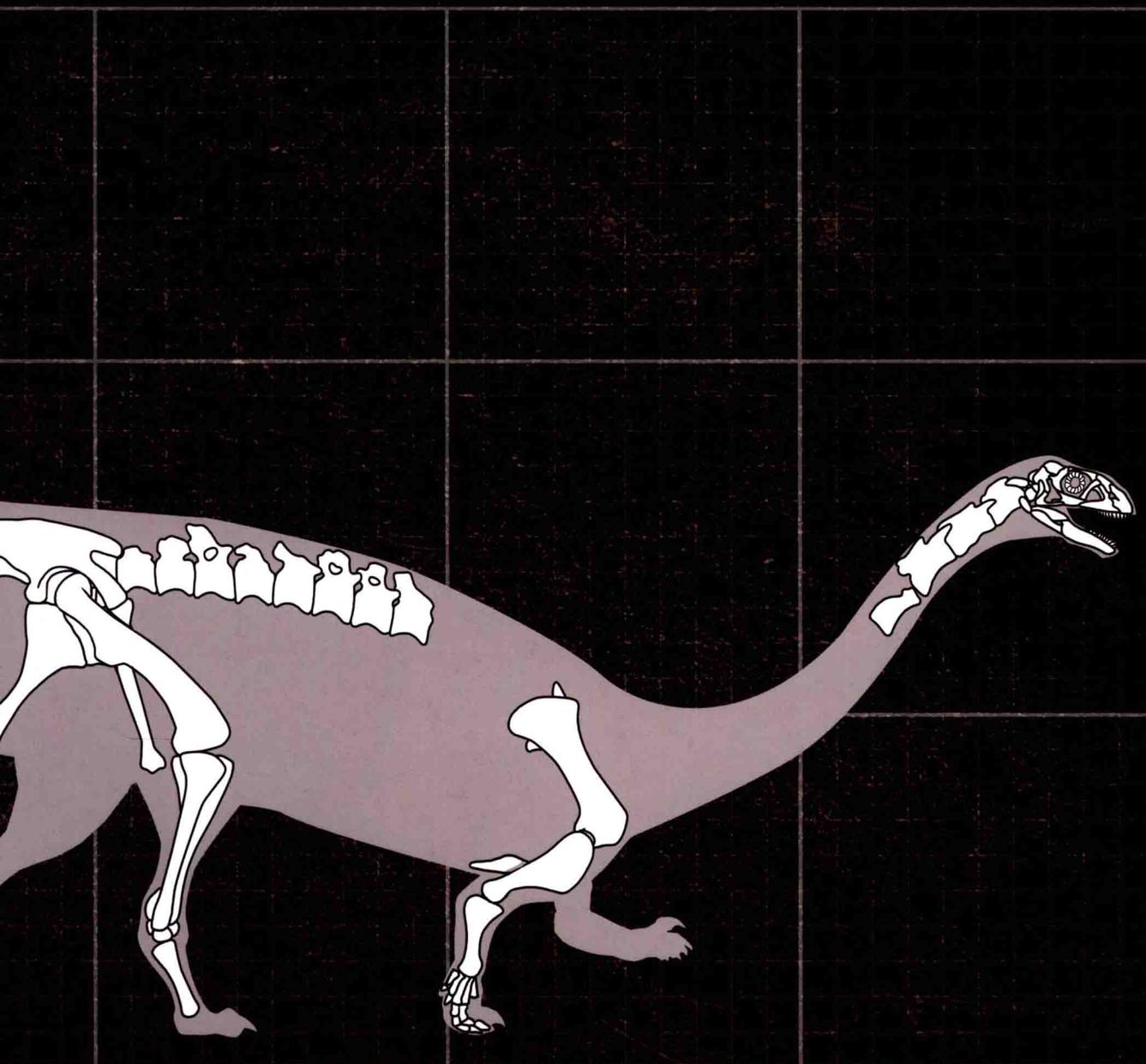
化石产地：中国云南

命名者：杨钟健

蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

原蜥脚下目 Prosauropoda



Taxonomic Name: *Yunnanosaurus huangi* Young, 1942

Etymology: The generic name means "Yunnan lizard".

The specific name honours the renowned the Chinese geologist Jiqing Huang, fellow of the academy of Science of China.

Body Size: around 5 to 7 meters long, 2 to 3 meters high

Diet: Herbivore

Age: the Early Jurassic, approximately 190 million years ago

Locality: Yunnan, China

First Described by: Zhongjian Yang

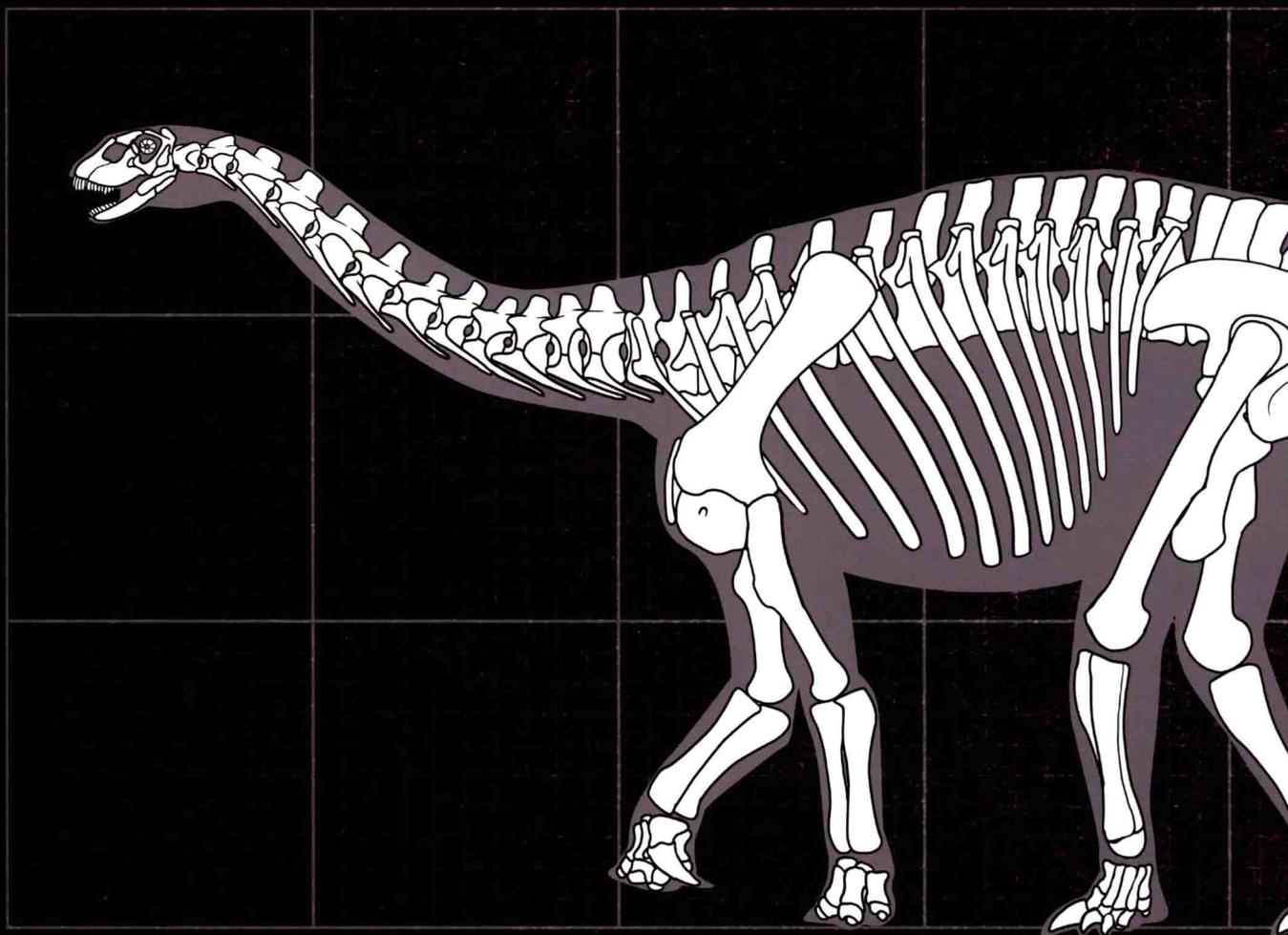
Yunnanosaurus huangi Young, 1942





*Chris
2007*

Shunosaurus lii Dong et al., 1983



中文名称：李氏蜀龙

学名：*Shunosaurus lii* Dong et al., 1983

释义：属名意为“来自四川的蜥蜴”。

种名纪念都江堰建造者李冰。

大小：体长 8~12m

食性：植食

生存年代：中侏罗世，距今约 1.64 亿年

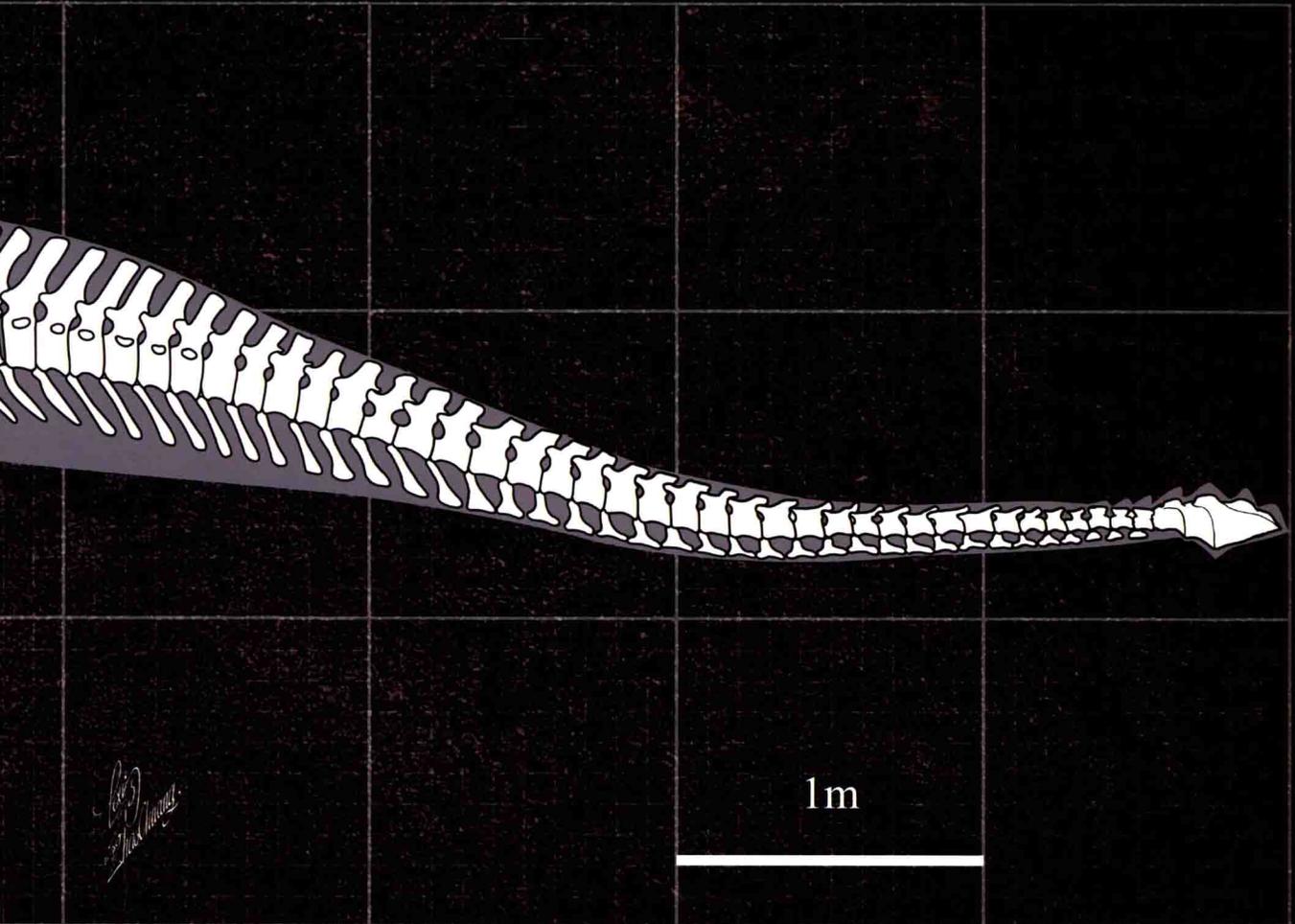
化石产地：中国四川

命名者：董枝明，张奕宏，周世武

蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

蜥脚下目 Sauropoda



Taxonomic Name: *Shunosaurus lii* Dong et al., 1983

Etymology: The generic name means "Sichuan lizard".

The specific name is to commemorate Bing Li, the designer and constructor of Dujiangyan Dam.

Body Size: around 8 to 12 meters long

Diet: Herbivore

Age: the Middle Jurassic, approximately 164 million years ago

Locality: Sichuan, China

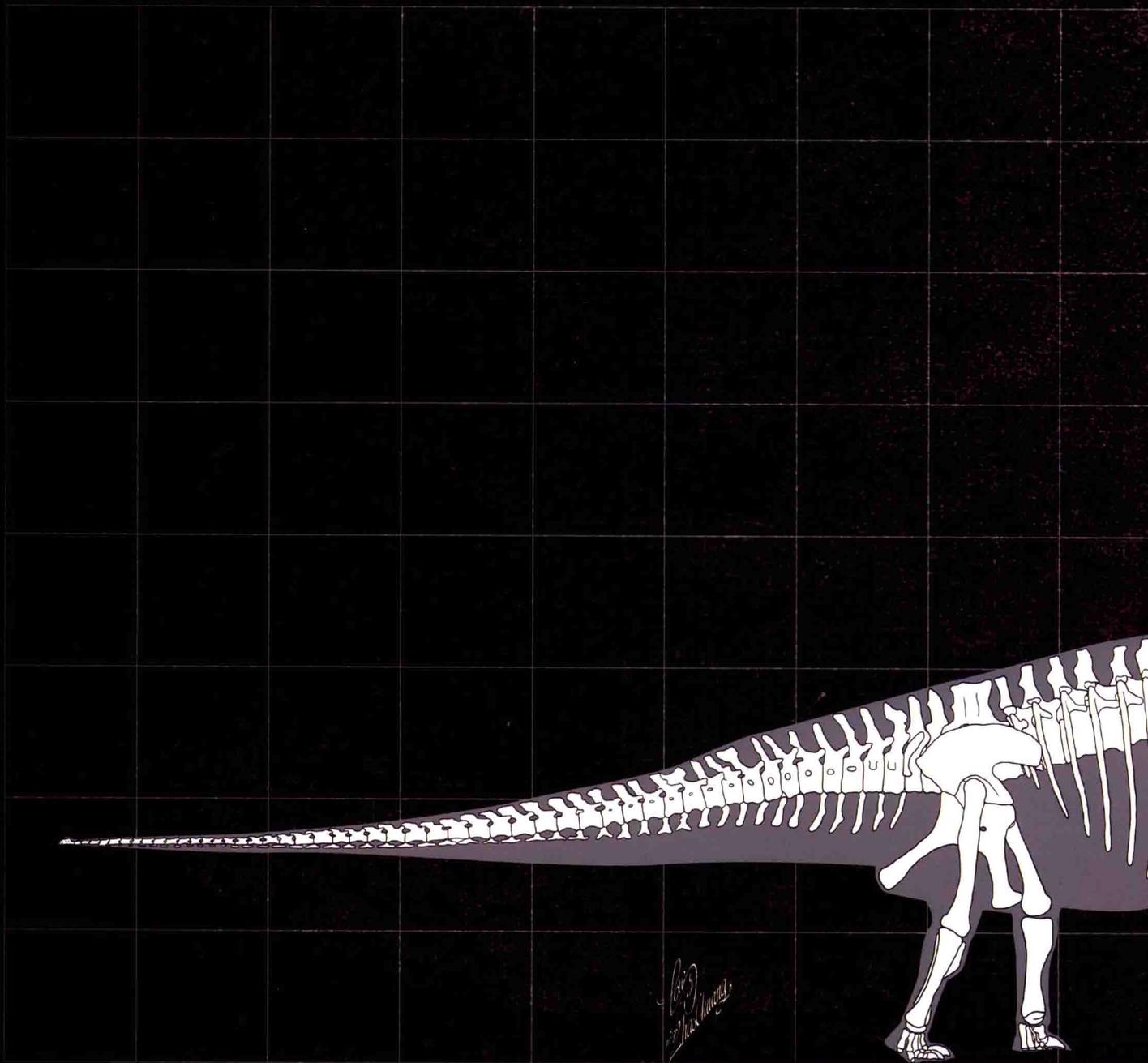
First Described by: Zhiming Dong, Yihong Zhang, Shiwu Zhou

Shunosaurus lii Dong et al., 1983





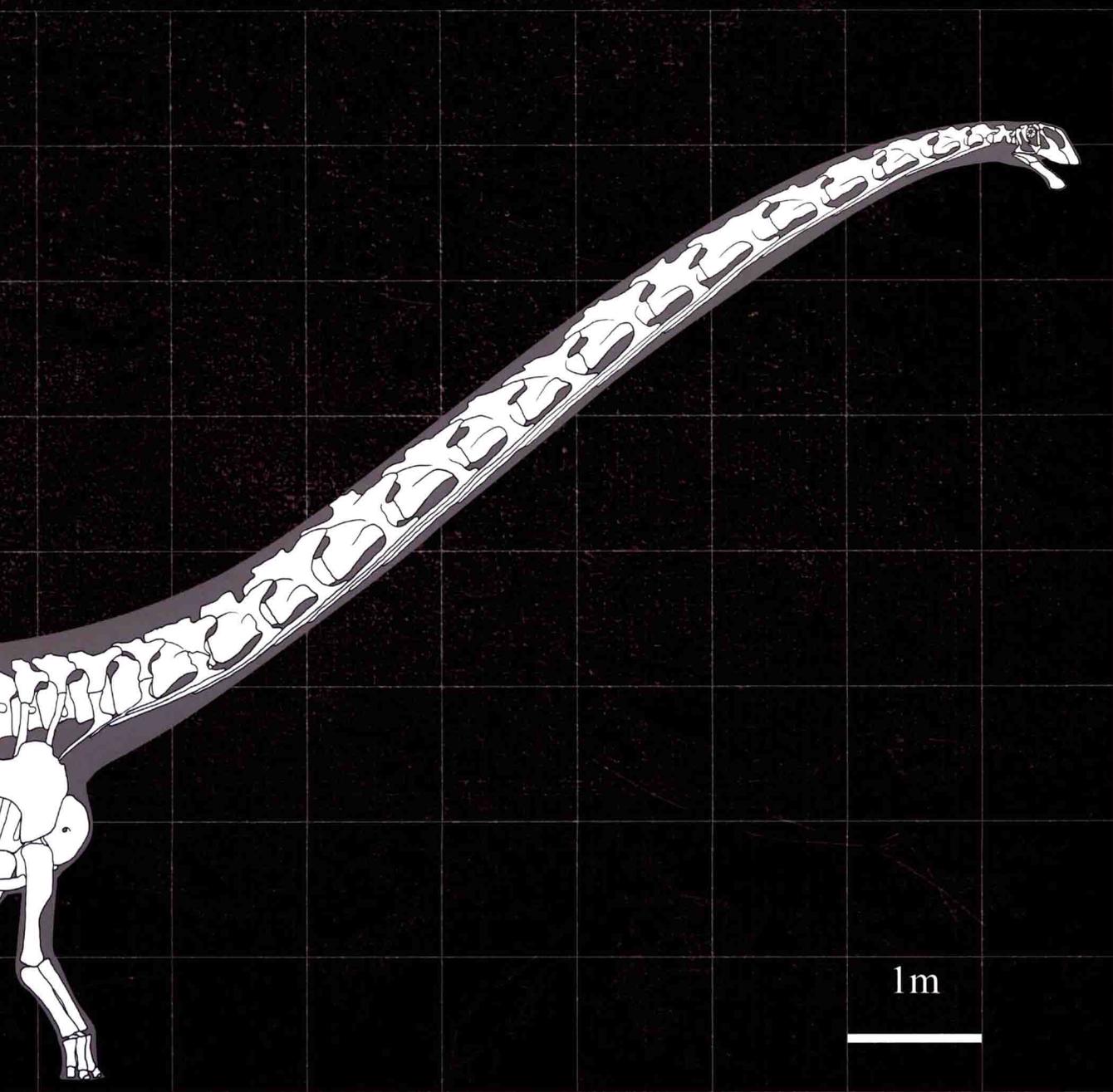
Mamenchisaurus hochuanensis Young et Zhao, 1972



蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

蜥脚下目 Sauropoda



Mamenchisaurus hochuanensis Young et Zhao, 1972



中文名称：合川马门溪龙

学名：*Mamenchisaurus hochuanensis* Young et Zhao, 1972

释义：属名意为“马鸣溪的蜥蜴”。

种名指其化石发现地合川县。

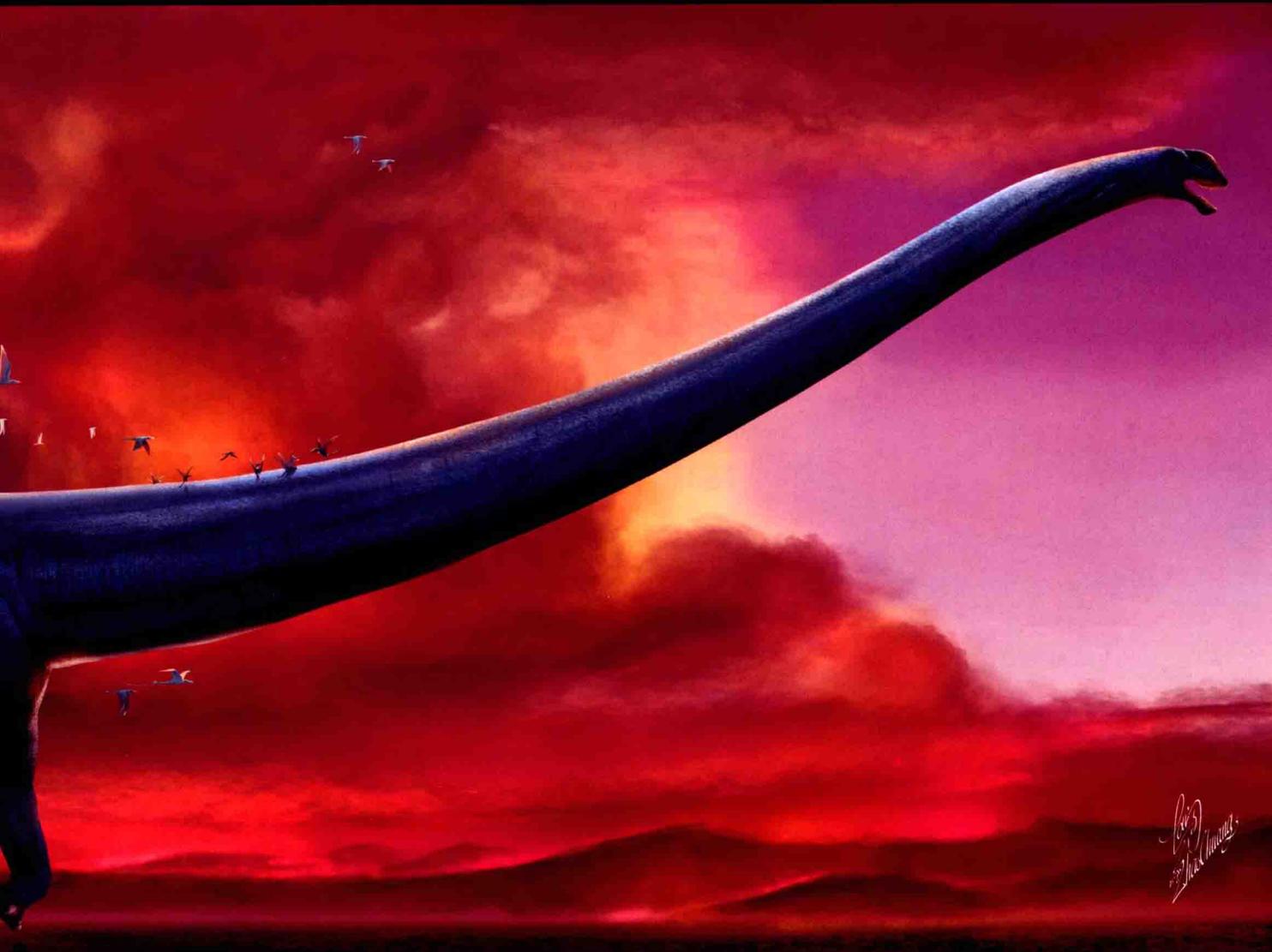
大小：体长约 18m

食性：植食

生存年代：晚侏罗世

化石产地：中国四川

命名者：杨钟健，赵喜进



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Taxonomic Name: *Mamenchisaurus hochuanensis* Young et Zhao, 1972

Etymology: The generic name means "Mamenchi lizard".

The specific name refers to the Hochuan county in Sichuan province where the fossil remains were found.

Body Size: around 18 meters long

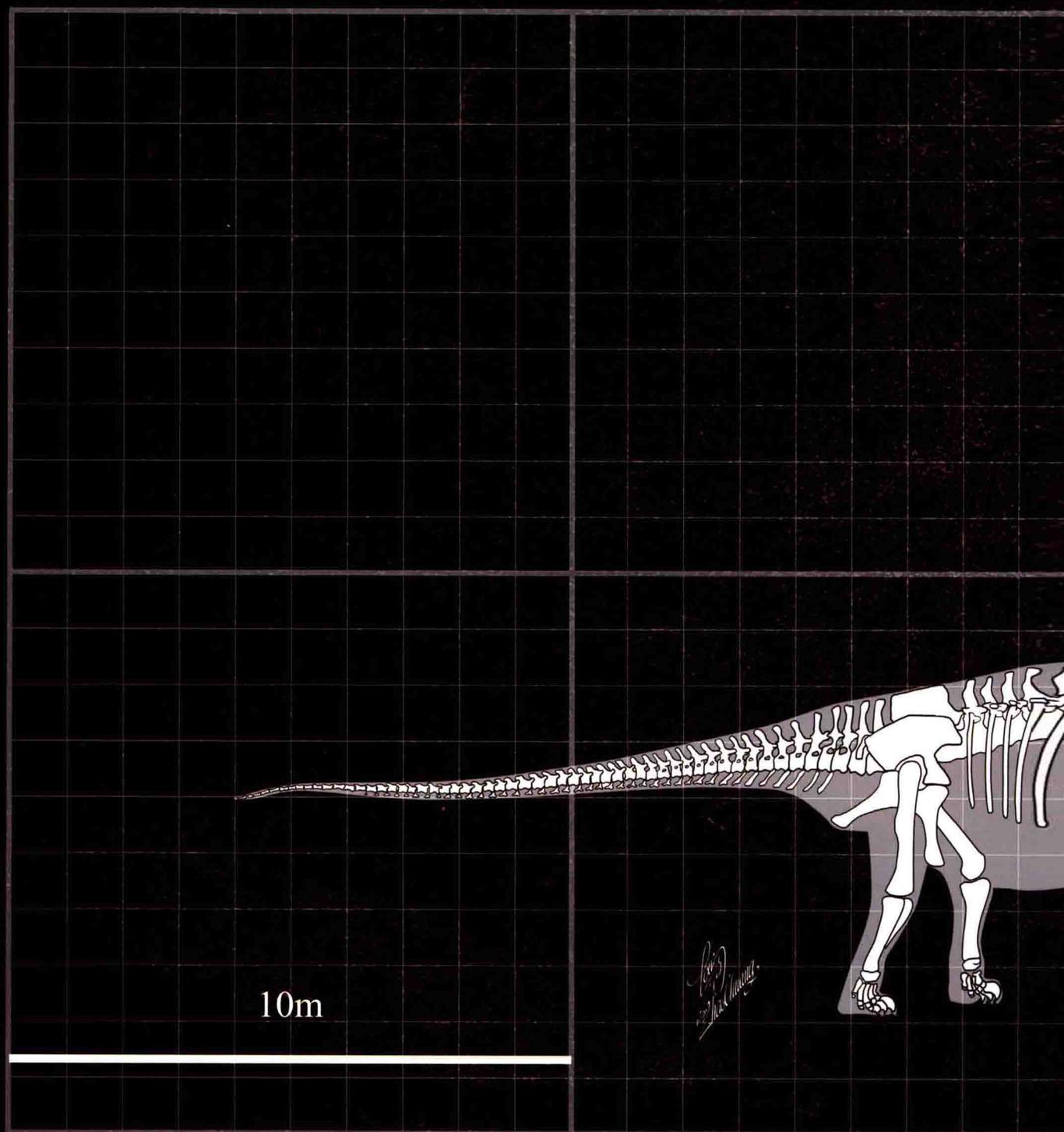
Diet: Herbivore

Age: thr Late Jurassic

Locality: Sichuan, China

First Described by: Zhongjian Yang, Xijin Zhao

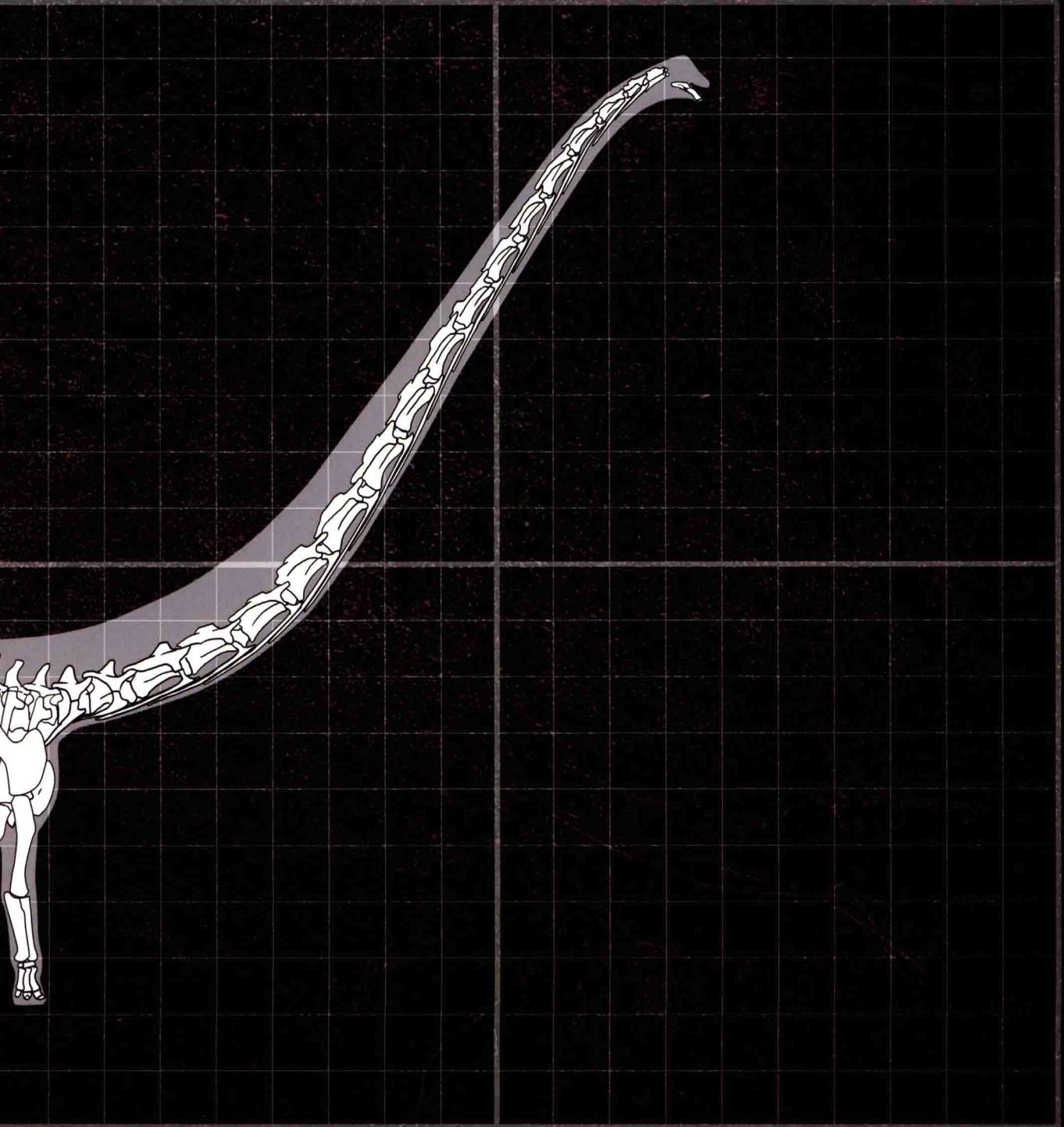
Mamenchisaurus sinocanadorum Russell et Zheng, 1993



蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

蜥脚下目 Sauropoda





中文名称：中加马门溪龙

学名：*Mamenchisaurus sinocanadorum* Russell et Zheng, 1993

释义：属名意为“马鸣溪的蜥蜴”。

种名意为“中国”和“加拿大”，来自于两个国家的古生物联合考察项目。

大小：体长 27~34m

食性：植食

生存年代：晚侏罗世早期

化石产地：中国新疆

命名者：Dale Russell 等

Taxonomic Name: *Mamenchisaurus sinocanadorum* Russell et Zheng, 1993

Etymology: The generic name means "Mamenchi lizard".

The specific name refers to Sino-Canada paleontology expedition project who find the fossils.

Body Size: around 27 to 34 meters long

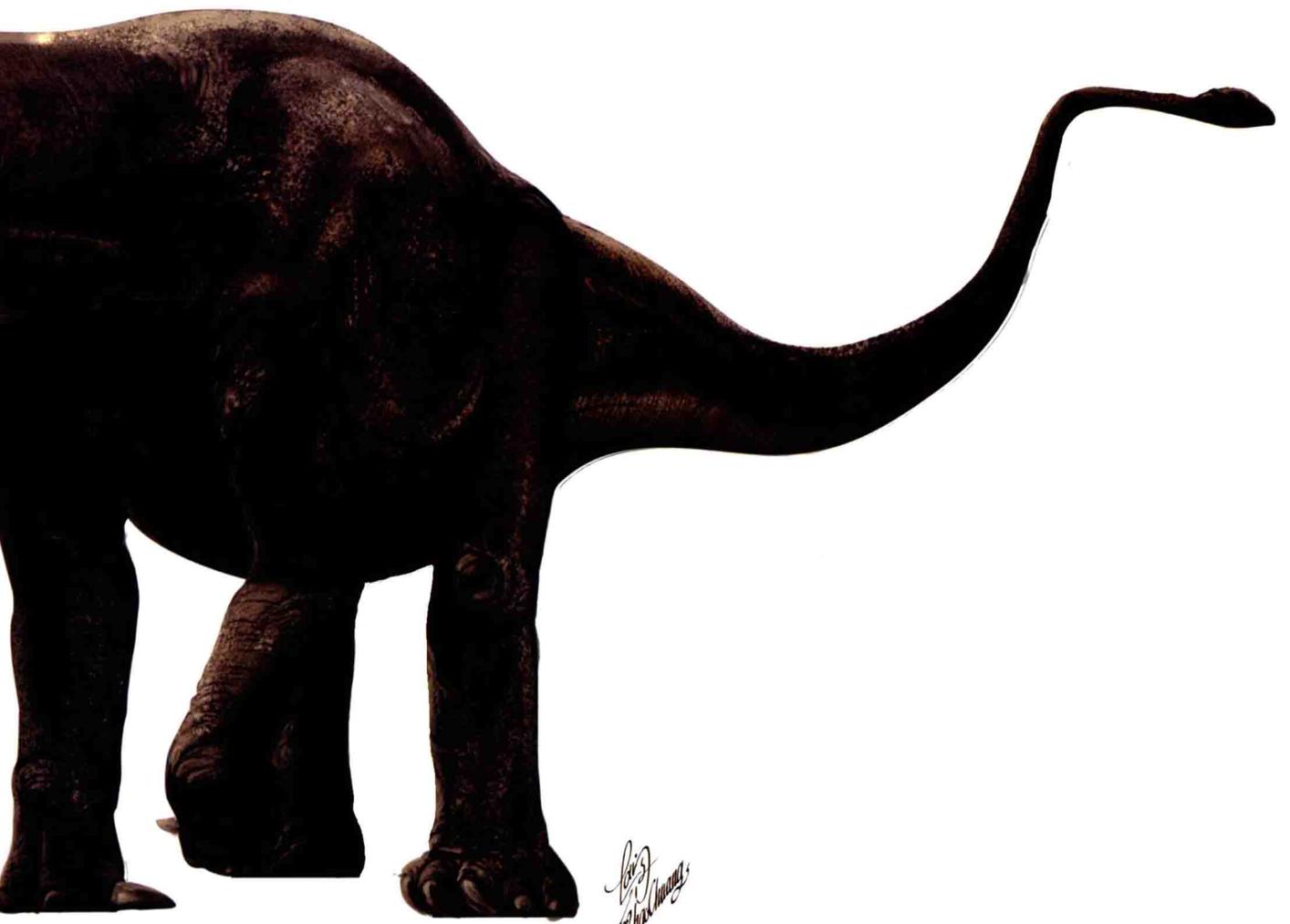
Diet: Herbivore

Age: the early Late Jurassic

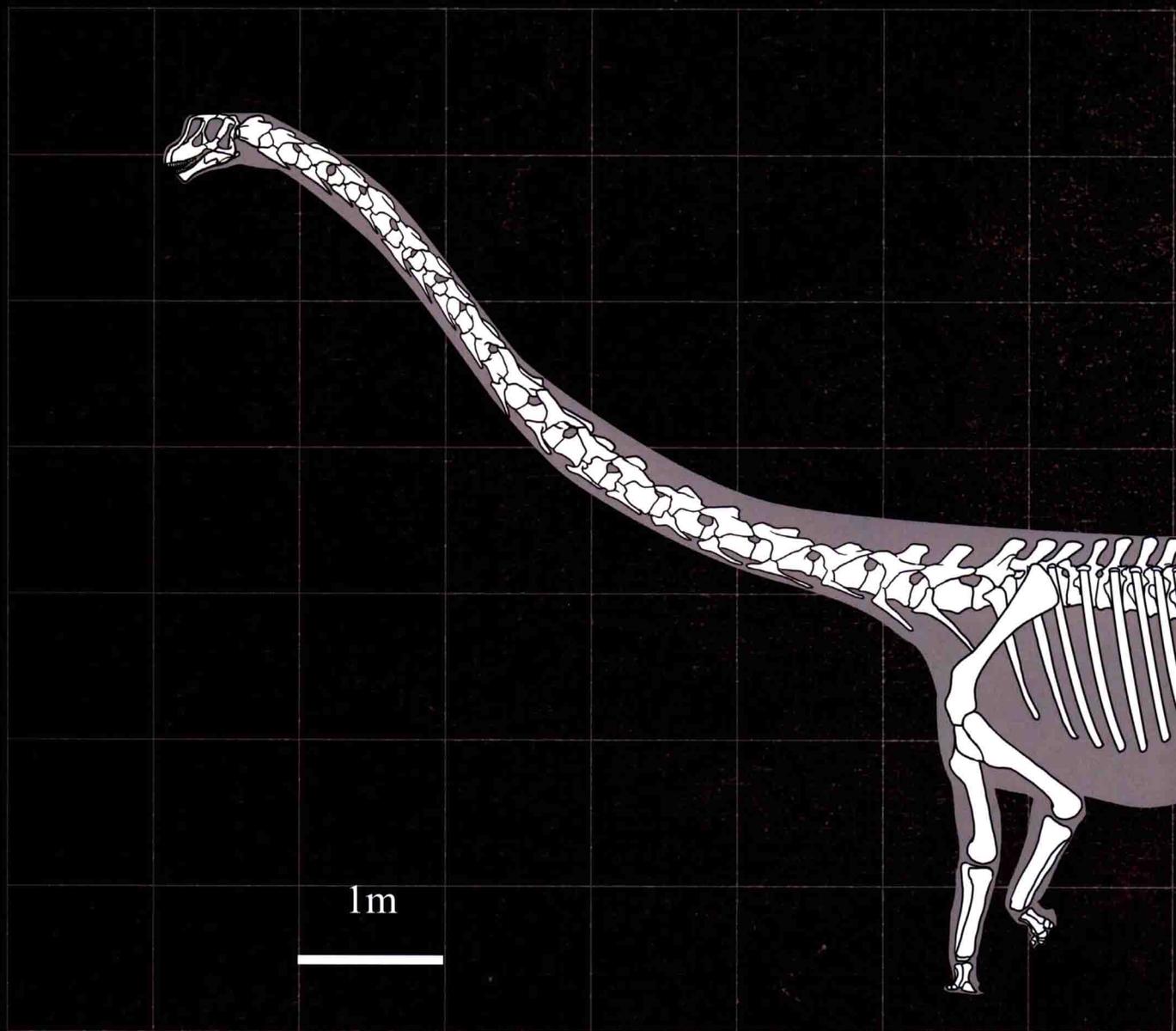
Locality: Xinjiang, China

First Described by: Dale Russell etc

Mamenchisaurus sinocanadorum Russell et Zheng, 1993



Klamelisaurus gobiensis Zhao, 1993



中文名称：戈壁克拉美丽龙

学名：*Klamelisaurus gobiensis* Zhao, 1993

释义：属名意为“来自克拉美丽山的蜥蜴”。

种名取自发现地的环境。

大小：体长约 17m，高约 5m，体重约 15000kg

食性：植食

生存年代：中侏罗世，距今 1.7 亿年~1.65 亿年

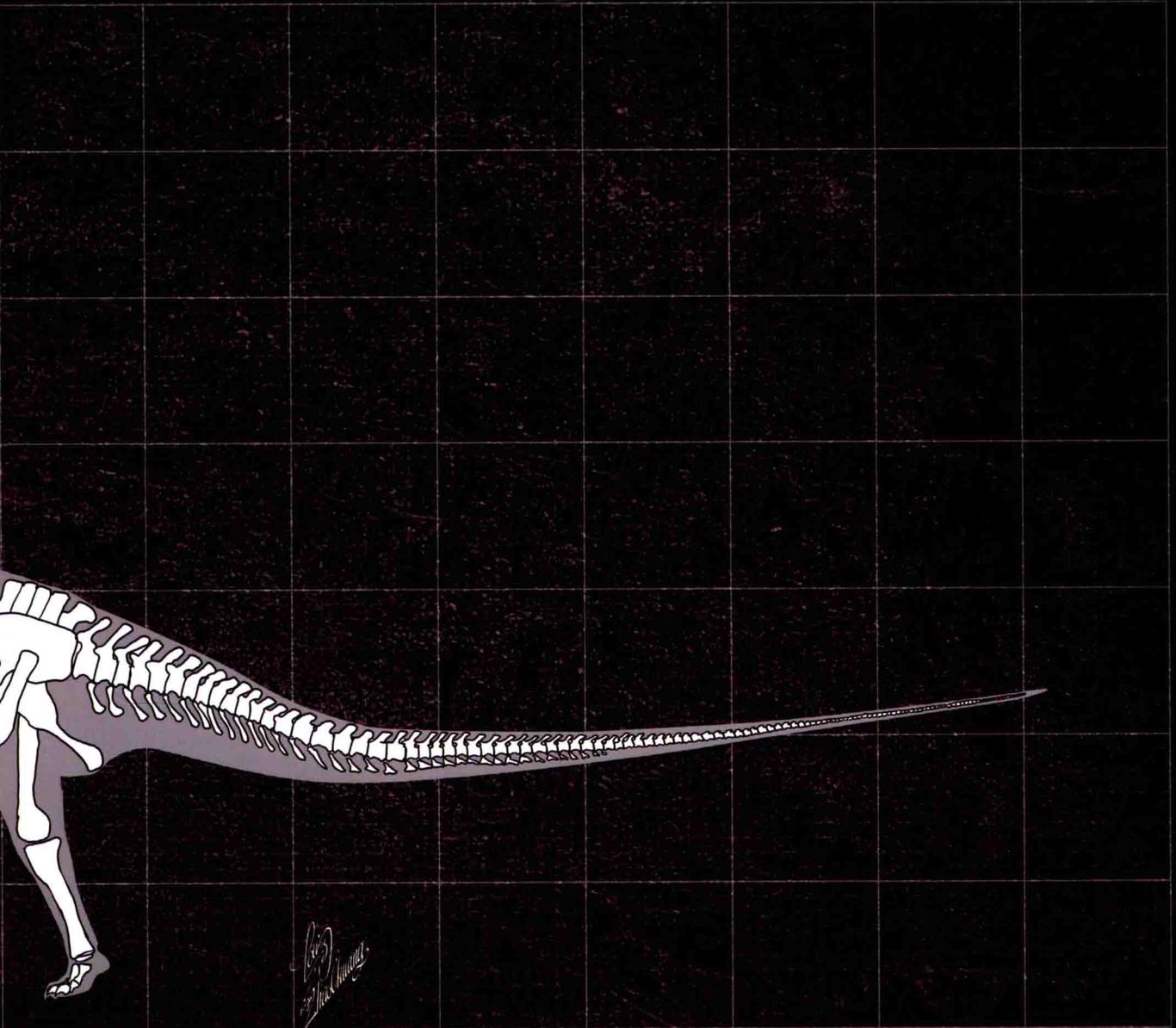
化石产地：中国新疆

命名者：赵喜进

蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

蜥脚下目 Sauropoda



Taxonomic Name: *Klamelisaurus gobiensis* Zhao, 1993

Etymology: The generic name means "Mount Kelameili lizard".

The specific name refers to its discovered site, the Gobi desert in Xinjiang.

Body Size: around 17 meters long, 5 meters high, with an estimated weight of 15000 kg

Diet: Herbivore

Age: the Middle Jurassic, approximately 170 to 165 million years ago

Locality: Xinjiang, China

First Described by: Xijin Zhao

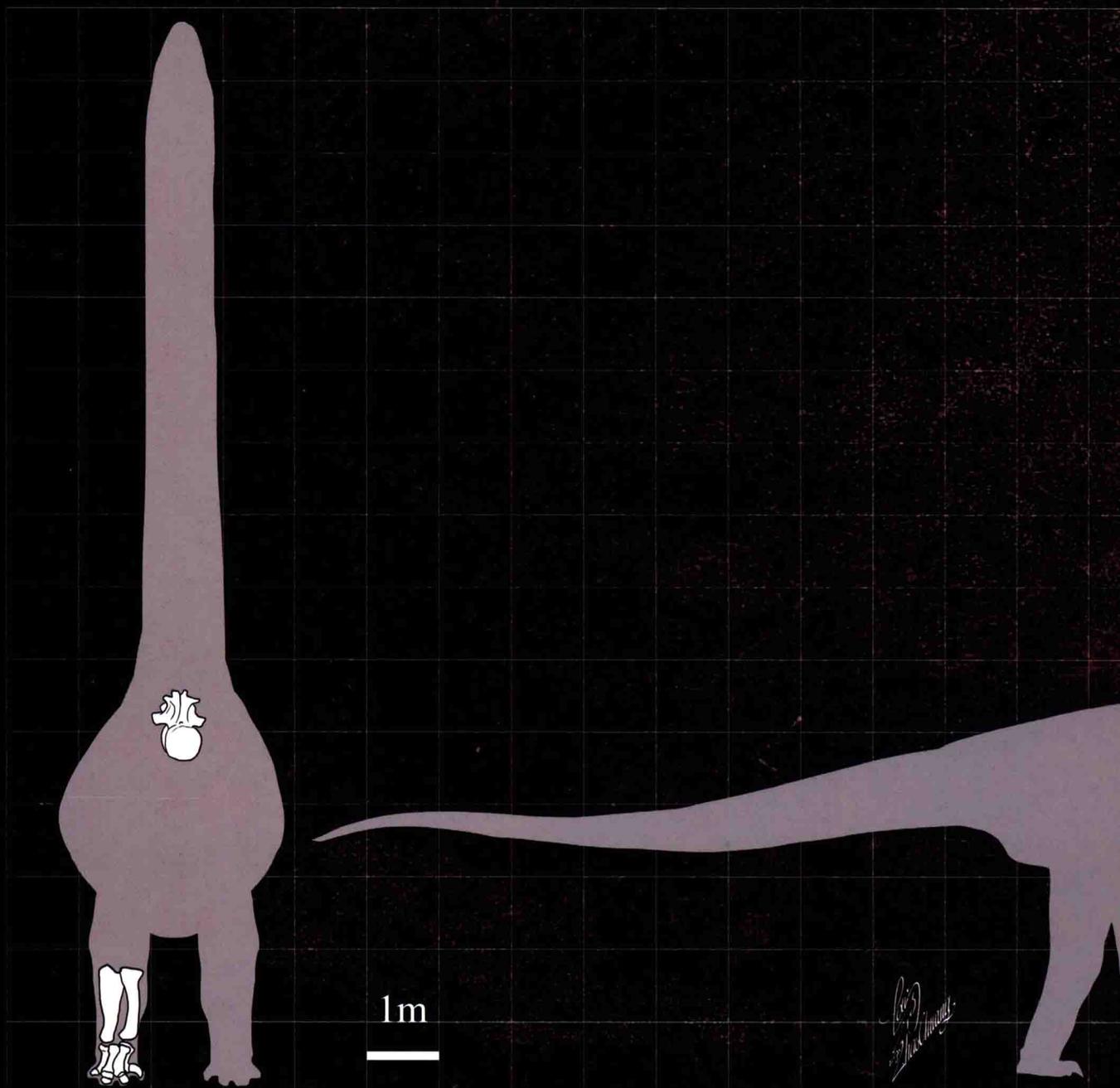
Klamelisaurus gobiensis Zhao, 1993





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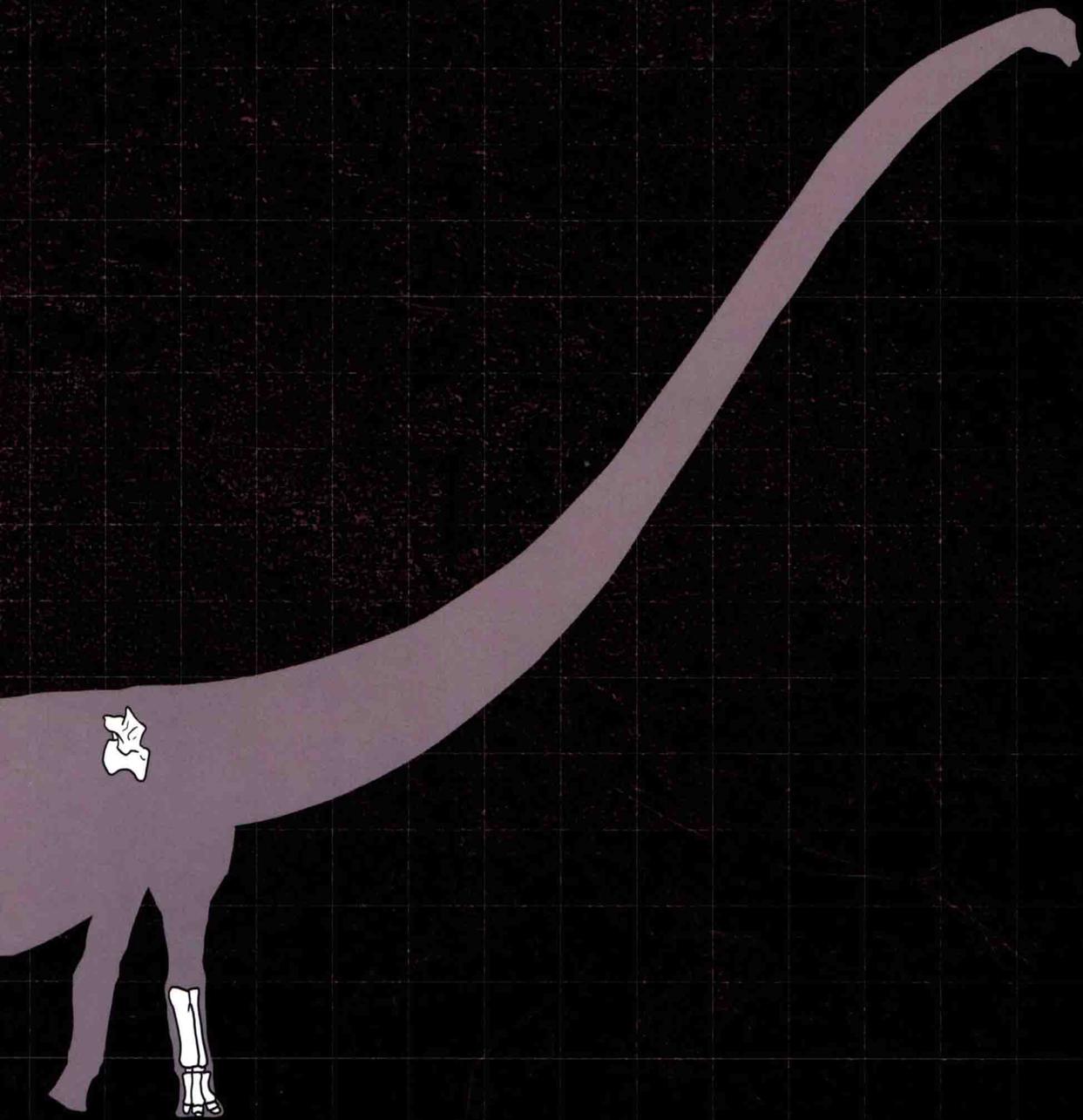
Hudiesaurus sinojapanorum Dong, 1997



蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

蜥脚下目 Sauropoda



Hudiesaurus sinojapanorum Dong, 1997



中文名称：中日蝴蝶龙

学名：*Hudiesaurus sinojapanorum* Dong, 1997

释义：属名意为“如蝴蝶般美丽的蜥蜴”。

种名指其化石发现于中日丝绸之路联合考察中。

大小：体长超过 30m，高约 7m，体重约 30000kg

食性：植食

生存年代：晚侏罗世，距今 1.6 亿年~1.55 亿年

化石产地：中国新疆

命名者：董枝明



Taxonomic Name: *Hudiesaurus sinojapanorum* Dong, 1997

Etymology: The generic name means "butterfly lizard".

The specific name refers to the Sino-Japan silk road dinosaur expedition, which found the fossil remains.

Body Size: around 30 meters long, 7 meters high, with an estimated weight of 30000 kg

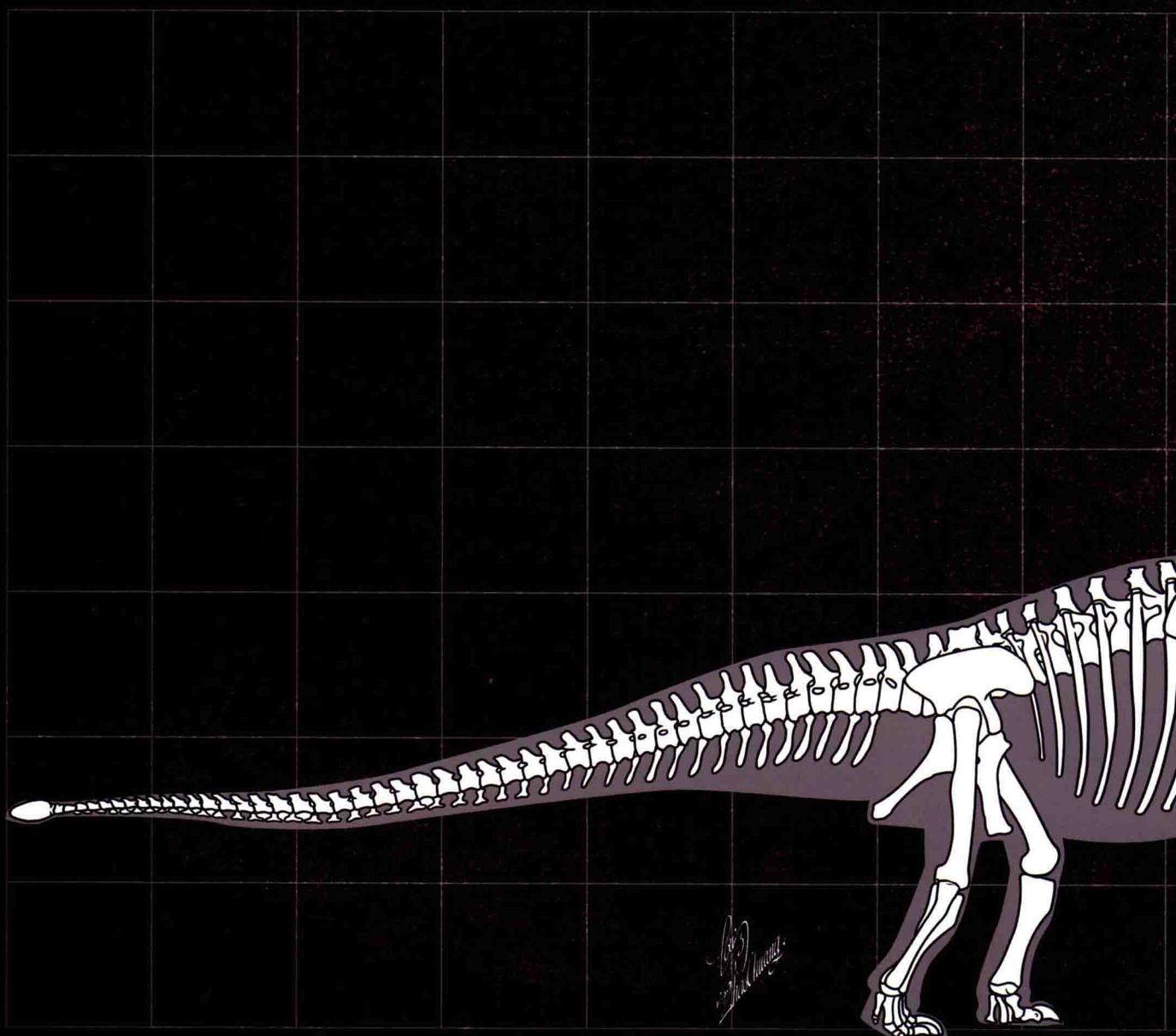
Diet: Herbivore

Age: the Late Jurassic, approximately 160 to 155 million years ago

Locality: Xinjiang, China

First Described by: Zhiming Dong

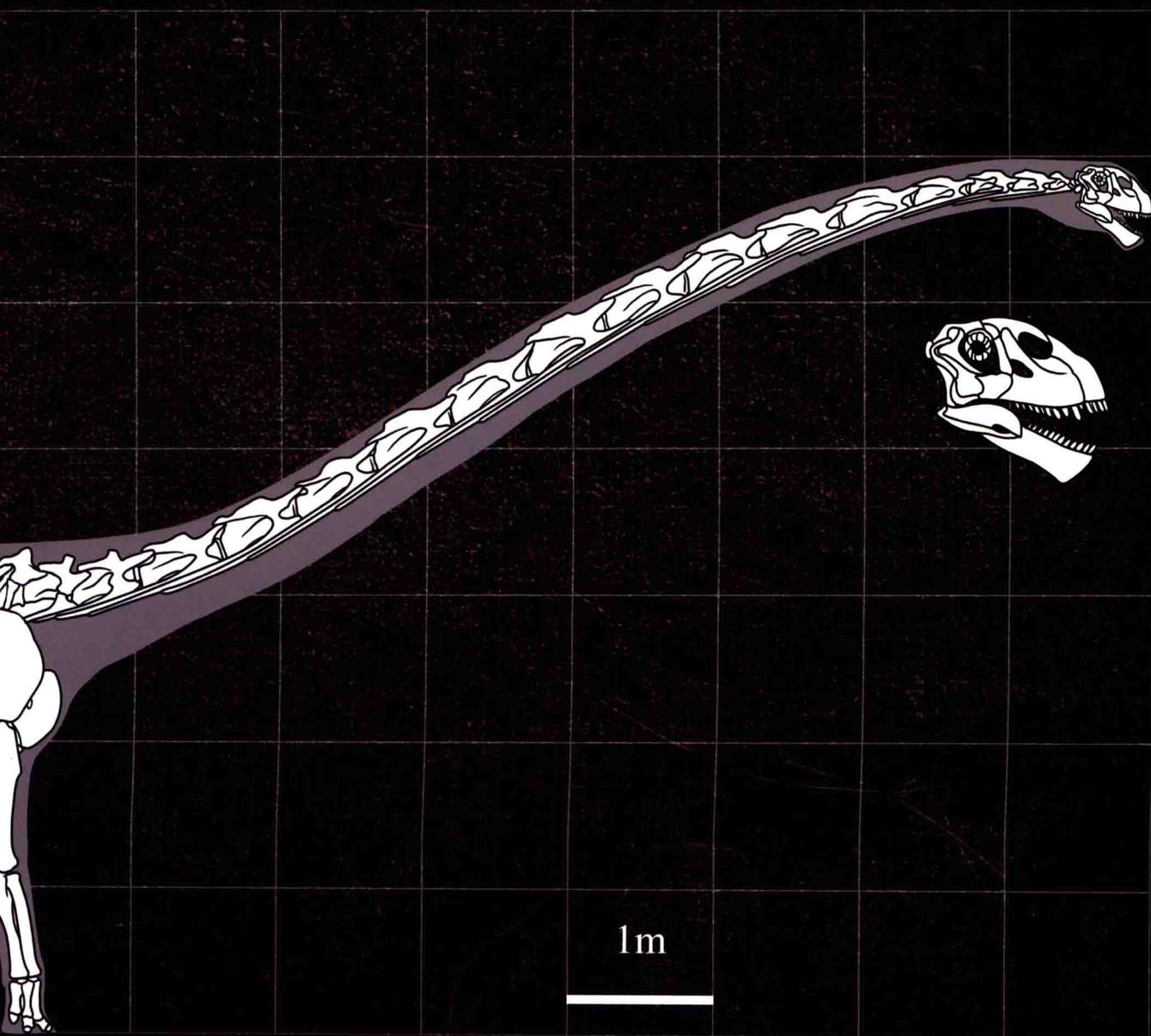
Omeisaurus tianfuensis He, Li, Cai et Gao, 1984



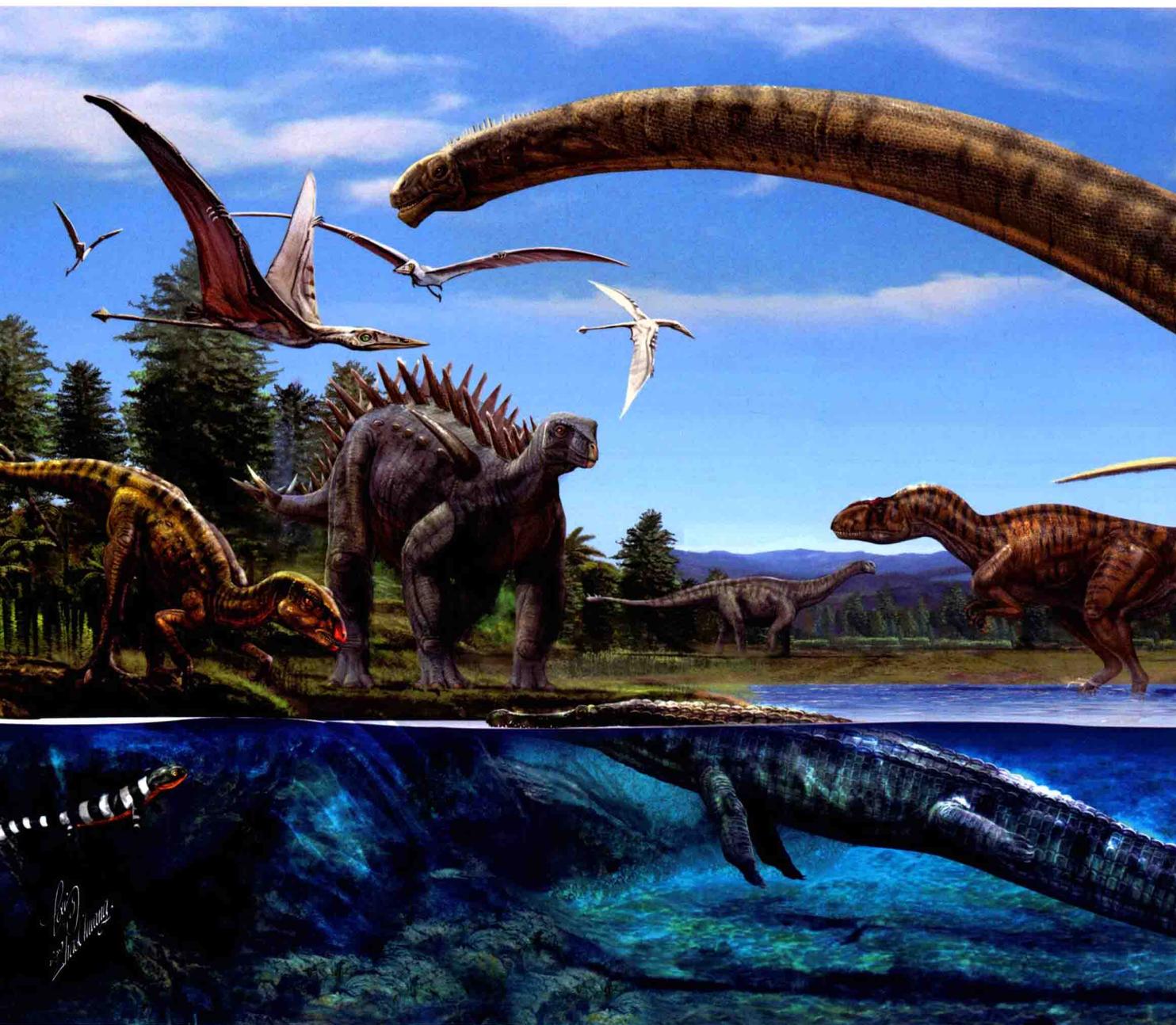
蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

蜥脚下目 Sauropoda



Omeisaurus tianfuensis He, Li, Cai et Gao, 1984



中文名称：天府峨眉龙

学名：*Omeisaurus tianfuensis* He, Li, Cai et Gao, 1984

释义：属名意为“峨眉山的蜥蜴”。

种名指四川盆地，国人称之为“天府”。

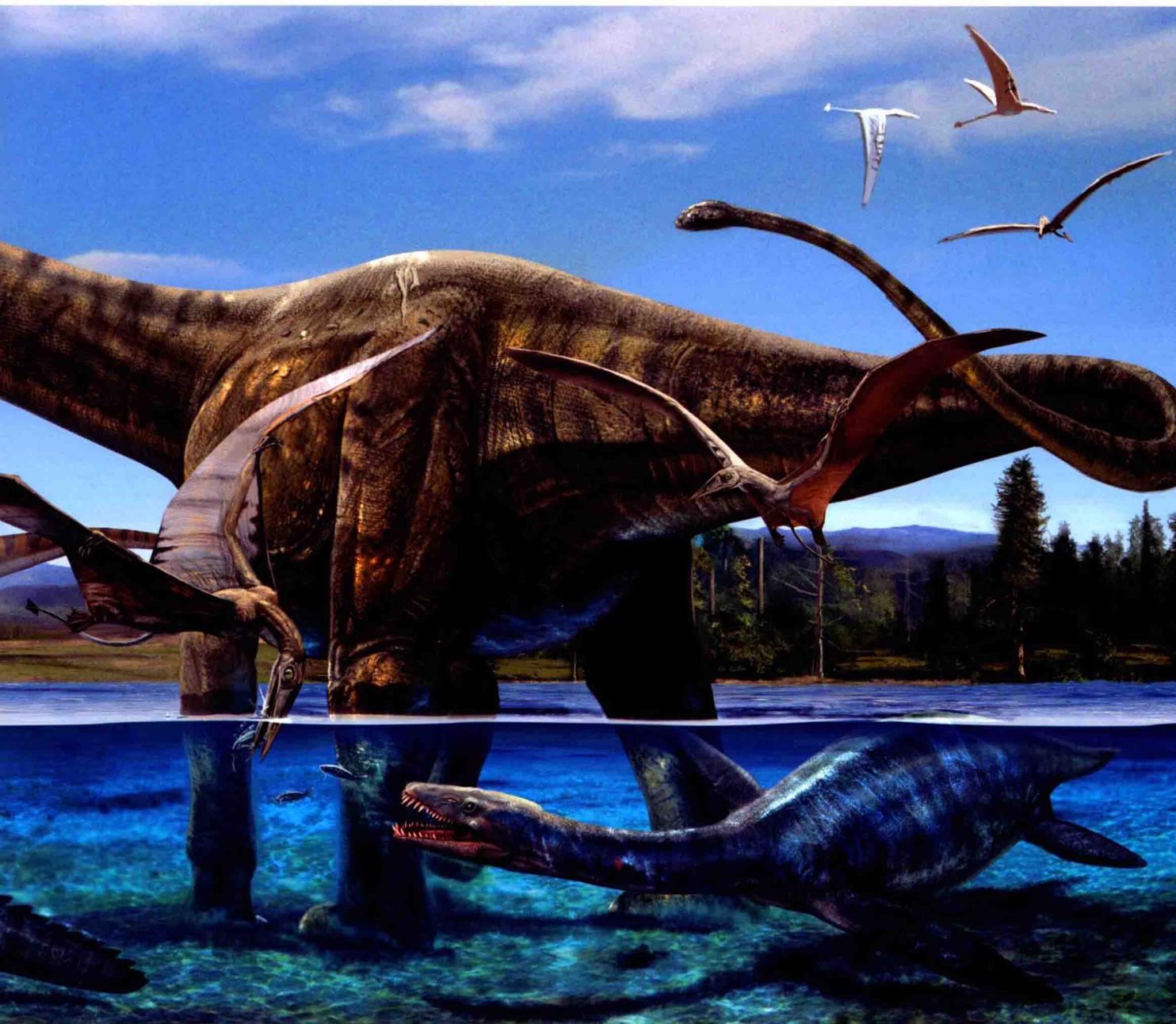
大小：体长约 17m

食性：植食

生存年代：中侏罗世，距今 1.64 亿年

化石产地：中国四川

命名者：何信禄，李奎，蔡开基，高玉辉



Taxonomic Name: *Omeisaurus tianfuensis* He, Li, Cai et Gao, 1984

Etymology: The generic name means "Mount Omei lizard".

The specific name refers to Sichuan province, where the Chinese people also call Tianfu, meaning "Heavenly house".

Body Size: around 17 meters long

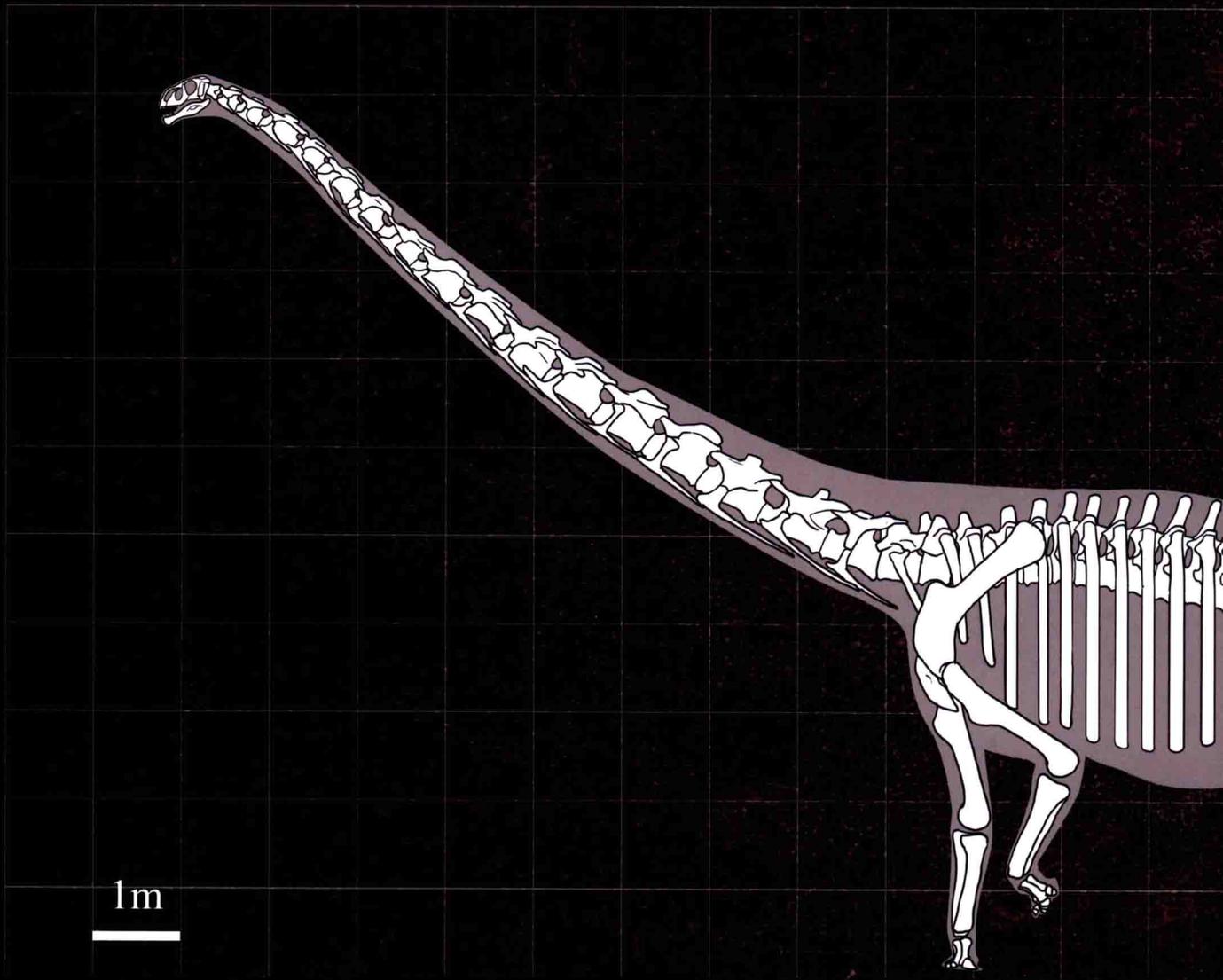
Diet: Herbivore

Age: the Middle Jurassic, approximately 164 million years ago

Locality: Sichuan, China

First Described by: Xinlu He, Kui Li, Kaiji Cai, Yuhui Gao

Chuanjiesaurus ananensis Fang et al., 2000



中文名称：阿纳川街龙

学名：*Chuanjiesaurus ananensis* Fang et al., 2000

释义：属名意为“来自川街地区的蜥蜴”。

种名代表首次发现其化石的阿纳村。

大小：体长超过 27m，高约 6m，体重约 25000kg

食性：植食

生存年代：晚侏罗世早期，距今约 1.6 亿年

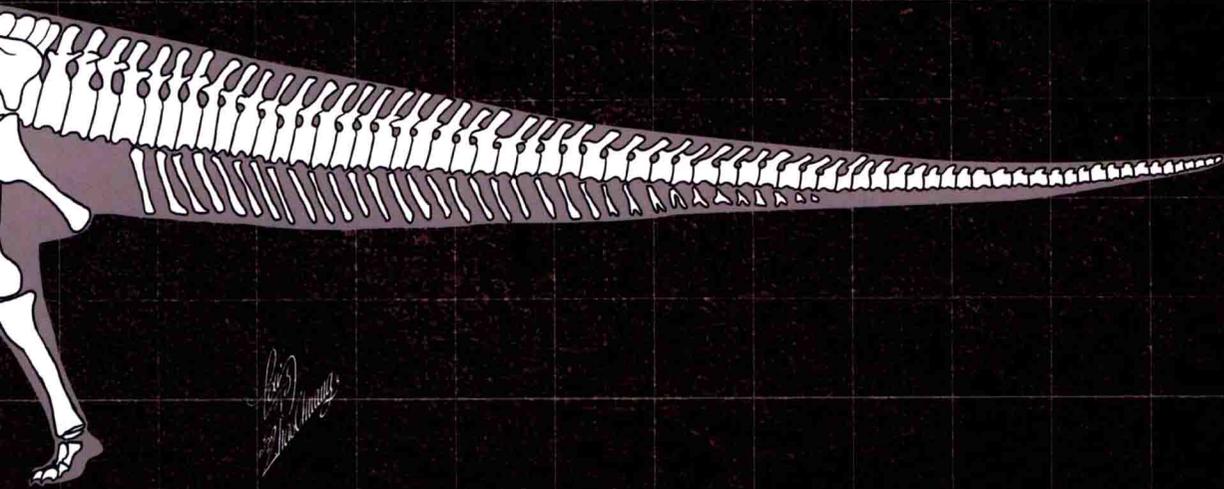
化石产地：中国云南

命名者：方晓思，庞其清，卢立伍等

蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

蜥脚下目 Sauropoda



Taxonomic Name: *Chuanjiesaurus ananensis* Fang et al., 2000

Etymology: The generic name means "Chuanjie lizard".

The specific name refers to the village of Ana, where the fossils remains were found.

Body Size: around 27 meters long, 6 meters high, with an estimated weight of 25000 kg

Diet: Herbivore

Age: the early Late Jurassic, approximately 160 million years ago

Locality: Yunnan, China

First Described by: Xiaosi Fang, Qiqing Pang, Liwu Lu etc

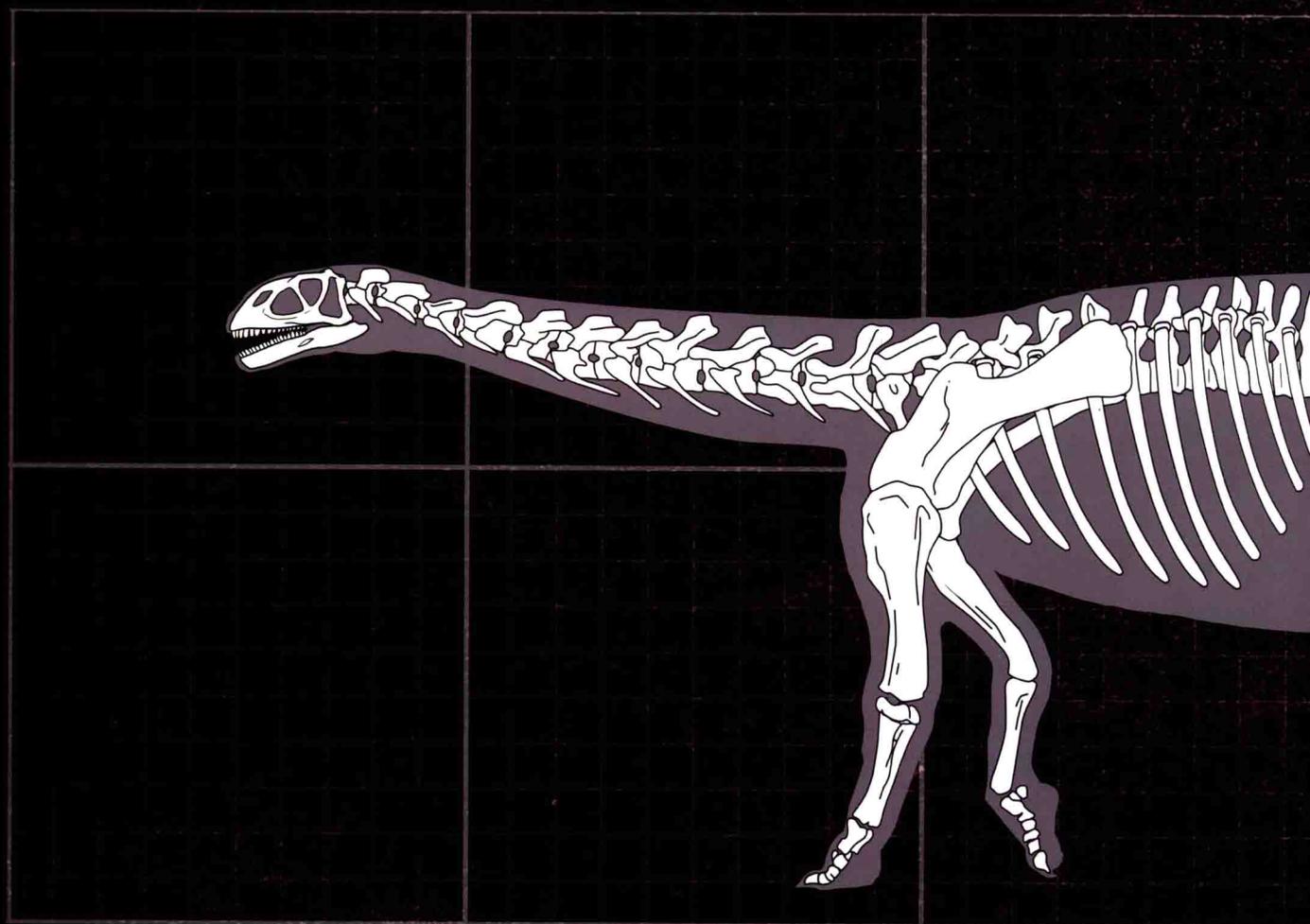
Chuanjiesaurus ananensis Fang et al., 2000





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The Jurassic Company

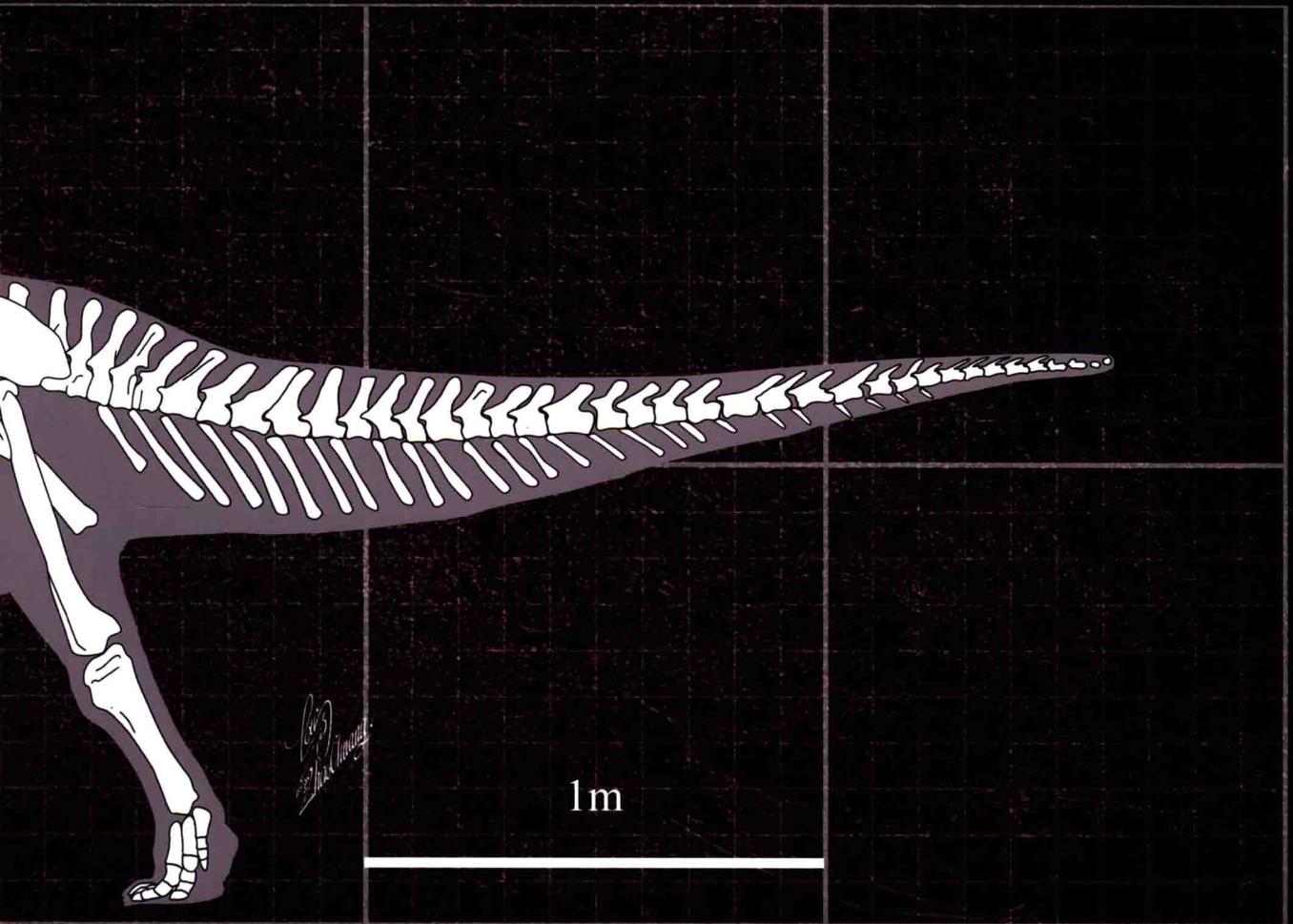
Bellusaurus sui Dong, 1990



蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

蜥脚下目 Sauropoda



Bellusaurus sui Dong, 1990



中文名称：苏氏巧龙

学名：*Bellusaurus sui* Dong, 1990

释义：属名意为“美丽的蜥蜴”。

种名献给已故去的苏有玲先生，巧龙是他生前修复的最后一条恐龙。

大小：体长约 4.8m

食性：植食

生存年代：中侏罗世，距今 1.7 亿年~1.6 亿年

化石产地：中国新疆

命名者：董枝明



Taxonomic Name: *Bellusaurus sui* Dong, 1990

Etymology: The generic name means "beautiful lizard".

The specific name honours the deceased fossil repair specialist Mr. Youling Su, the *Bellusaurus* is the last dinosaur which he repaired in his lifetime.

Body Size: around 4.8 meters long

Diet: Herbivore

Age: the Middle Jurassic, approximately 170 to 160 million years ago

Locality: Xinjiang, China

First Described by: Zhiming Dong

Nemegtosaurus pachi Dong, 1977

中文名称：耙齿纳摩盖吐龙

学名：*Nemegtosaurus pachi* Dong, 1977

释义：属名意为“纳摩盖吐的蜥蜴”。
种名指其四颗像钉状牙齿。

大小：体长约 12m

食性：植食

生存年代：晚白垩世

化石产地：中国内蒙古

命名者：董枝明

Taxonomic Name: *Nemegtosaurus pachi* Dong, 1977

Etymology: The generic name means "Nemegt lizard".

The specific name refers to the animal's four nail-like teeth.

Body Size: around 12 meters long

Diet: Herbivore

Age: the Late Cretaceous

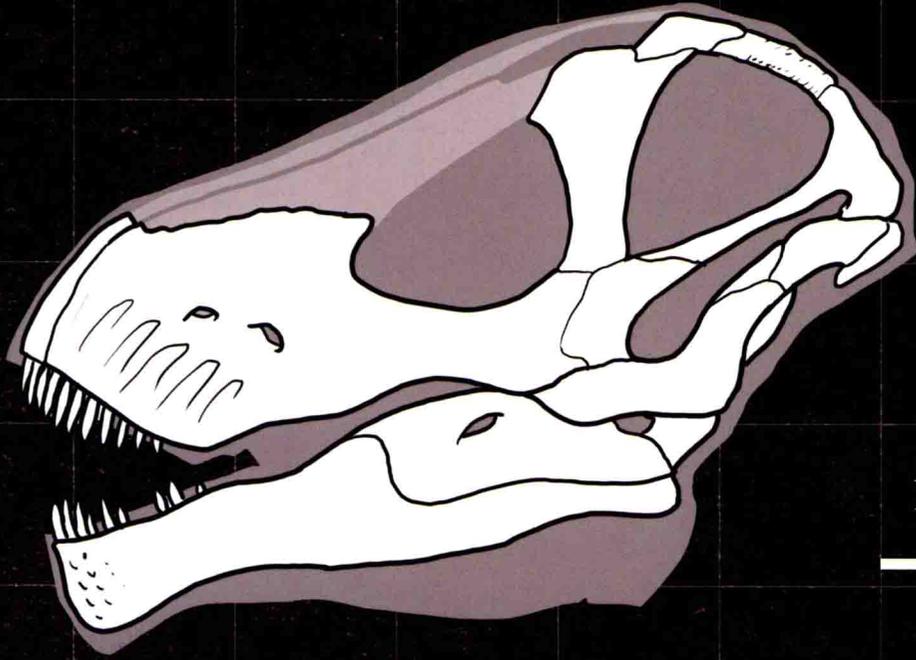
Locality: Inner Mongolia, China

First Described by: Zhiming Dong

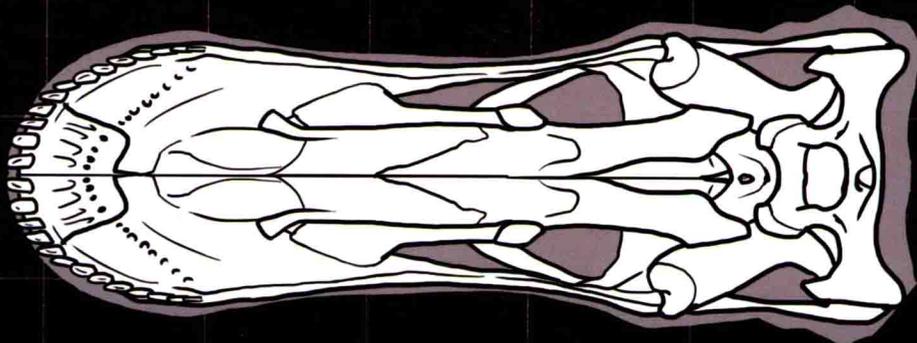
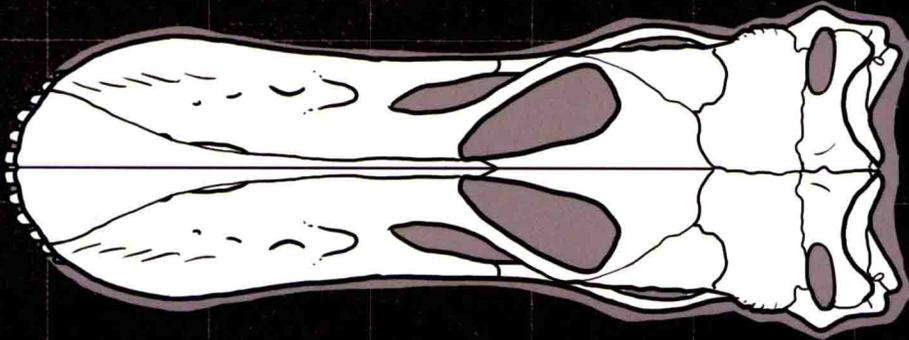
蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

蜥脚下目 Sauropoda



10cm



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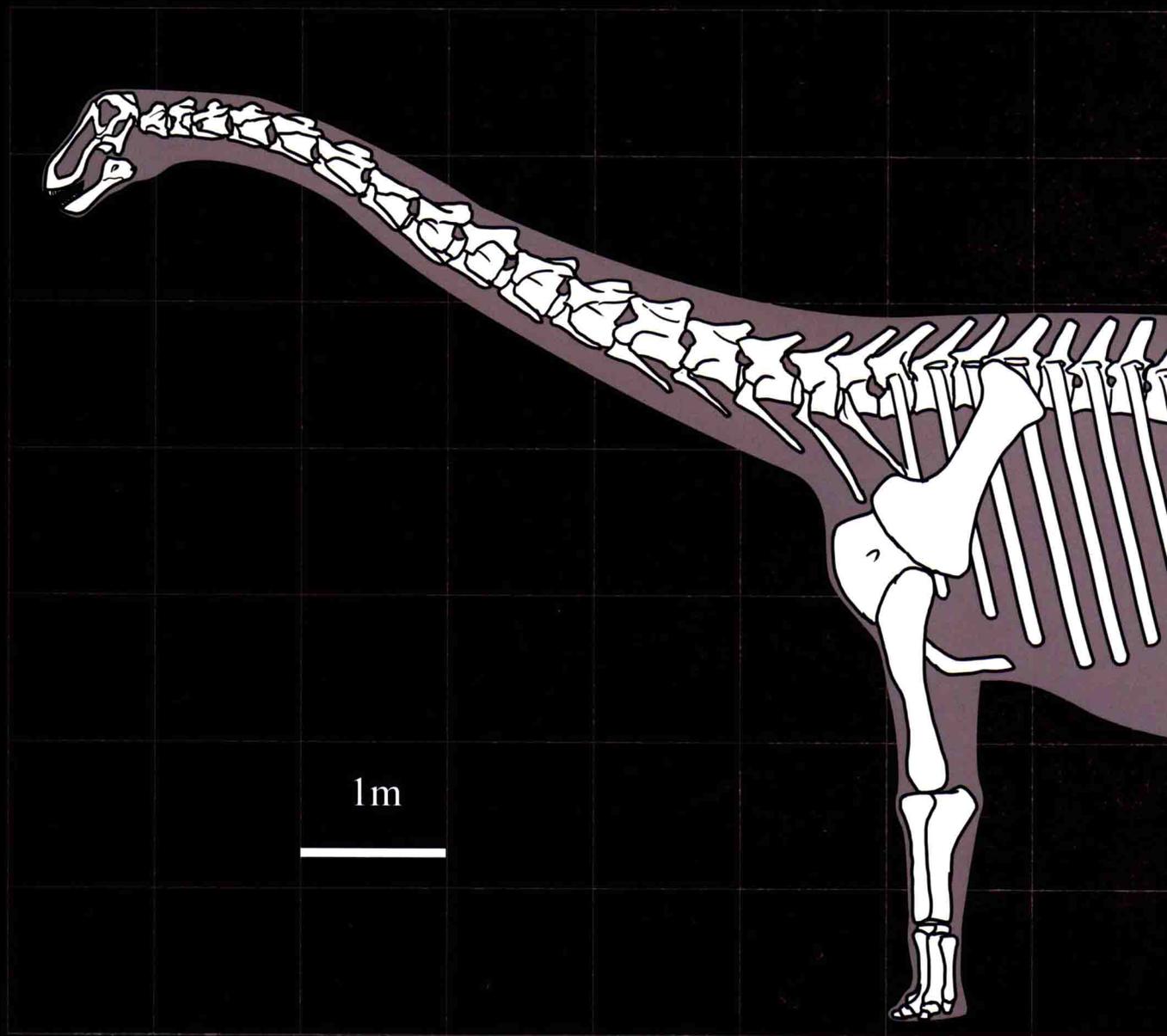
Nemegtosaurus pachi Dong, 1977



P. Dong
1977



Borealosaurus wimani You et al., 2004



中文名称：维氏北方龙

学名：*Borealosaurus wimani* You et al., 2004

释义：属名意为“北风蜥蜴”。

种名是献给瑞典古生物学家 Carl Wiman。

大小：体长约 17m，高约 5m，体重约 10000kg

食性：植食

生存年代：晚白垩世

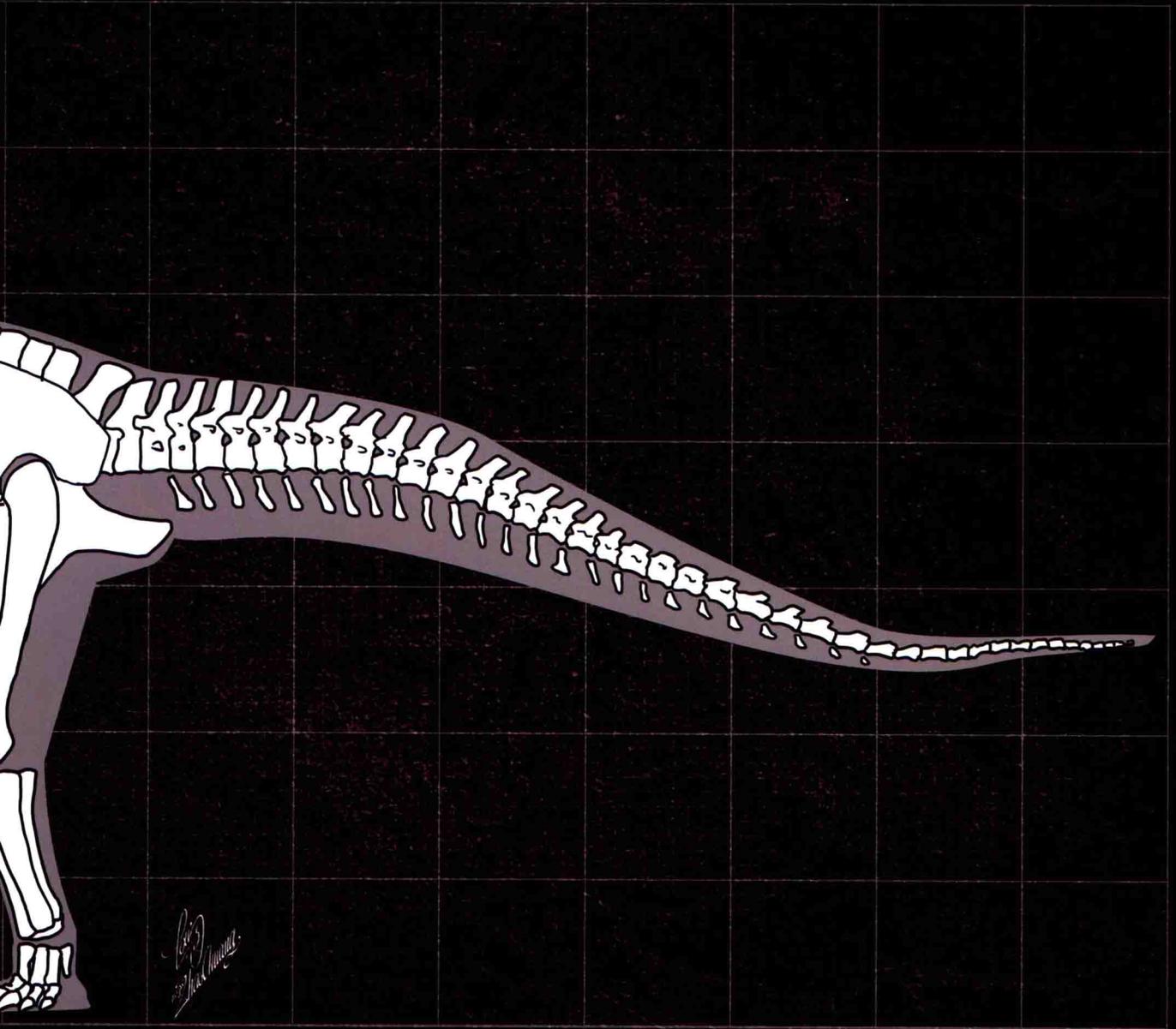
化石产地：中国辽宁

命名者：尤海鲁，季强，李景禄等

蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

蜥脚下目 Sauropoda



Taxonomic Name: *Borealosaurus wimani* You et al., 2004

Etymology: The generic name means "North wind Lizard".

The specific name honours Carl Wiman.

Body Size: around 17 meters long, 5 meters high, with an estimated weight of 10000 kg

Diet: Herbivore

Age: the Late Cretaceous

Locality: Liaoning, China

First Described by: Hailu You, Qiang Ji, Jinglu Li etc

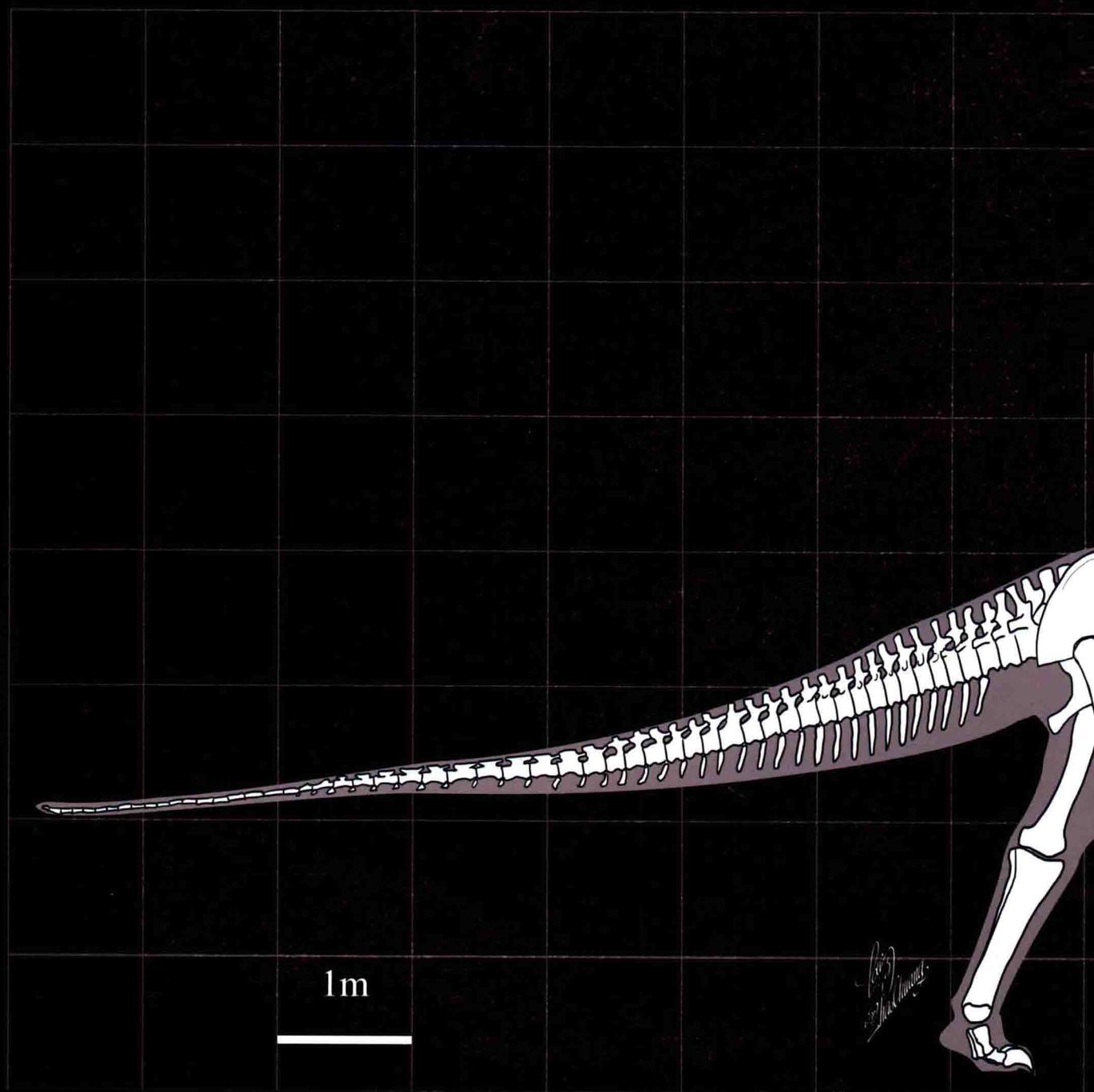


Borealosaurus wimani You et al., 2004



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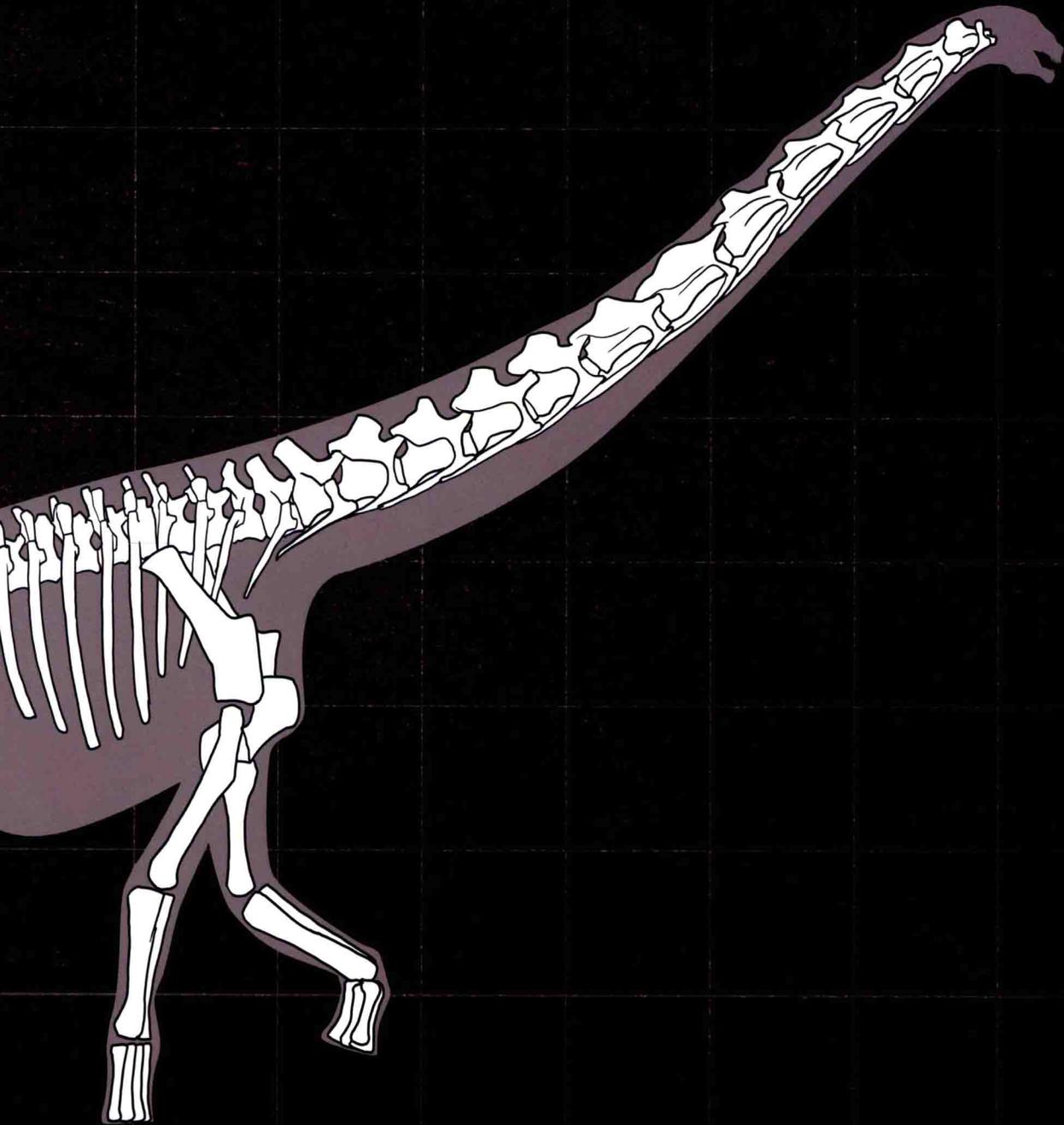
Huabeisaurus allocotus Pang et Cheng, 2000



蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

蜥脚下目 Sauropoda



Huabeisaurus allocotus Pang et Cheng, 2000

中文名称：不寻常华北龙

学名：*Huabeisaurus allocotus* Pang et Cheng, 2000

释义：属名意为“华北的蜥蜴”。
种名意为“不寻常”。

大小：体长约 17m，高约 5m

食性：植食

生存年代：晚白垩世，距今约 7500 万年

化石产地：中国山西

命名者：庞其清，程政武

Taxonomic Name: *Huabeisaurus allocotus* Pang et Cheng, 2000

Etymology: The generic name means "Northern China lizard".

The specific name means "out of ordinary, uncommon".

Body Size: around 17 meters long, 5 meters high

Diet: Herbivore

Age: the Late Cretaceous, approximately 75 million years ago

Locality: Shanxi, China

First Described by: Qiqing Pang, Zhengwu Cheng





Huanghetitan ruyangensis Lü et al., 2007

中文名称：汝阳黄河巨龙

学名：*Huanghetitan ruyangensis* Lü et al., 2007

释义：属名意为“黄河的巨龙”。

种名指化石发现地河南汝阳。

大小：体长约 15m, 高约 7m, 体重约 50000kg

食性：植食

生存年代：晚白垩世

化石产地：中国河南

命名者：吕君昌等

Taxonomic Name: *Huanghetitan ruyangensis* Lü et al., 2007

Etymology: The generic name means "Yellow river titan".

The specific name refers to the Ruyang county in Henan province where the fossil site was located.

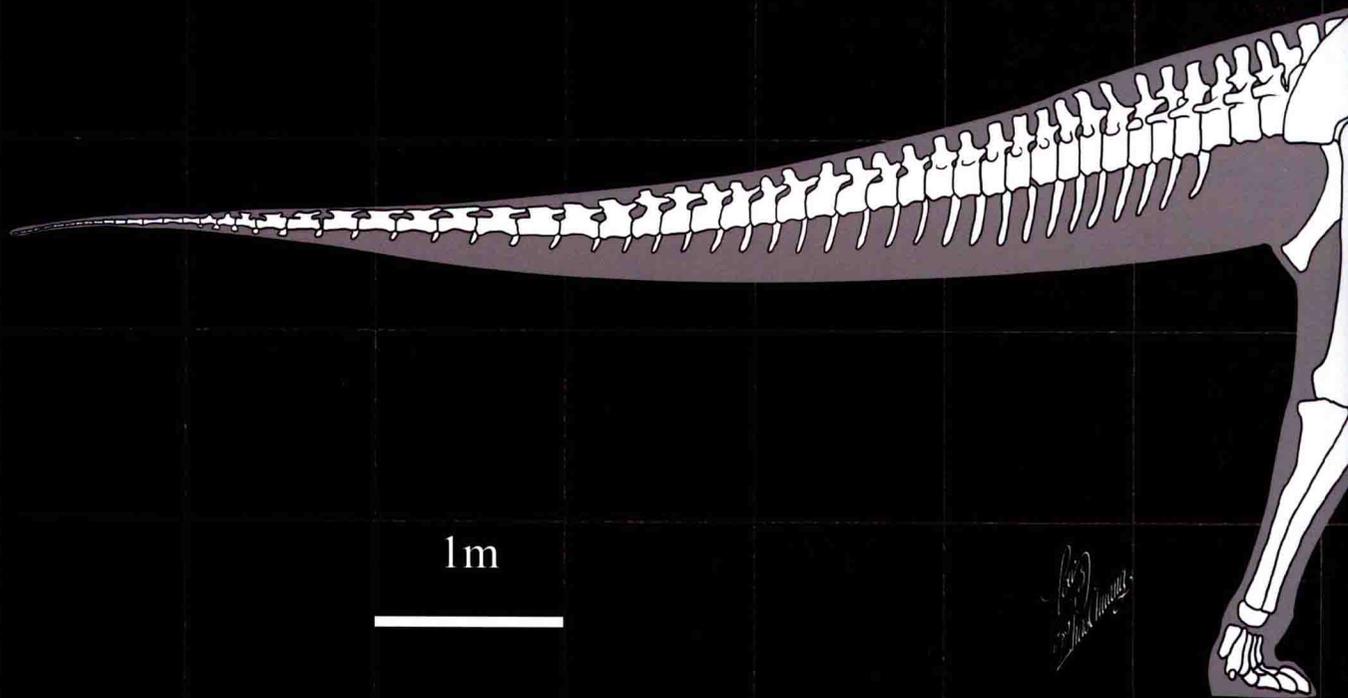
Body Size: around 15 meters long, 7 meters high, with an estimated weight of 50000 kg

Diet: Herbivore

Age: the Late Cretaceous

Locality: Henan, China

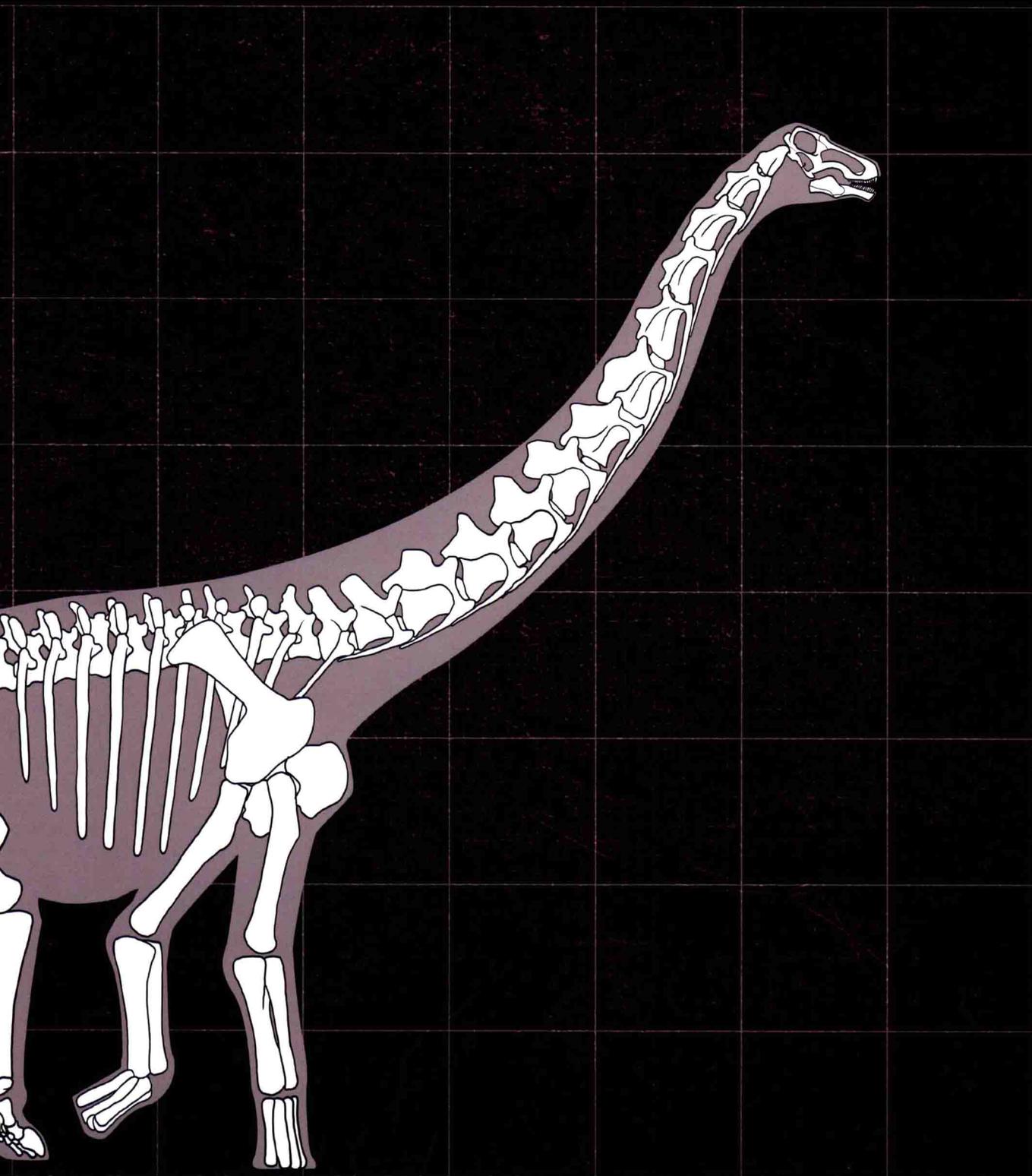
First Described by: Junchang Lü etc



蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

蜥脚下目 Sauropoda





Huanghetitan ruyangensis Lü et al., 2007



Dongyangosaurus sinensis Lü et al., 2008

中文名称：中国东阳龙

学名：*Dongyangosaurus sinensis* Lü et al., 2008

释义：属名意为“来自中国东阳的蜥蜴”。

种名意为“中国”，代表化石的发现国。

大小：体长约 16m，高约 5m，体重约 20000kg

食性：植食

生存年代：晚白垩世，距今 8500 万年

化石产地：中国浙江

命名者：吕君昌，东洋一，陈荣军，郑文杰，金幸生等

Taxonomic Name: *Dongyangosaurus sinensis* Lü et al., 2008

Etymology: The generic name means "Dongyang lizard".

The specific name refers to China.

Body Size: around 16 meters long, 5 meters high, with an estimated weight of 20000 kg

Diet: Herbivore

Age: the Late Cretaceous, approximately 85 million years ago

Locality: Zhejiang, China

First Described by: Junchang Lü, Yoichi Azuma, Rongjun Chen, Wenjie Zheng, Xingsheng Jin etc



蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

蜥脚下目 Sauropoda



10cm

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Dongyangosaurus sinensis Lü et al., 2008





Richard
Richard S

Daxiatitan binglingi You et al., 2008

中文名称：炳灵大夏巨龙

学名：*Daxiatitan binglingi* You et al., 2008

释义：意为“大夏的巨龙”。

种名来自藏语“炳灵”，意思是“十万个佛”，因为发现化石的地点附近有炳灵寺。

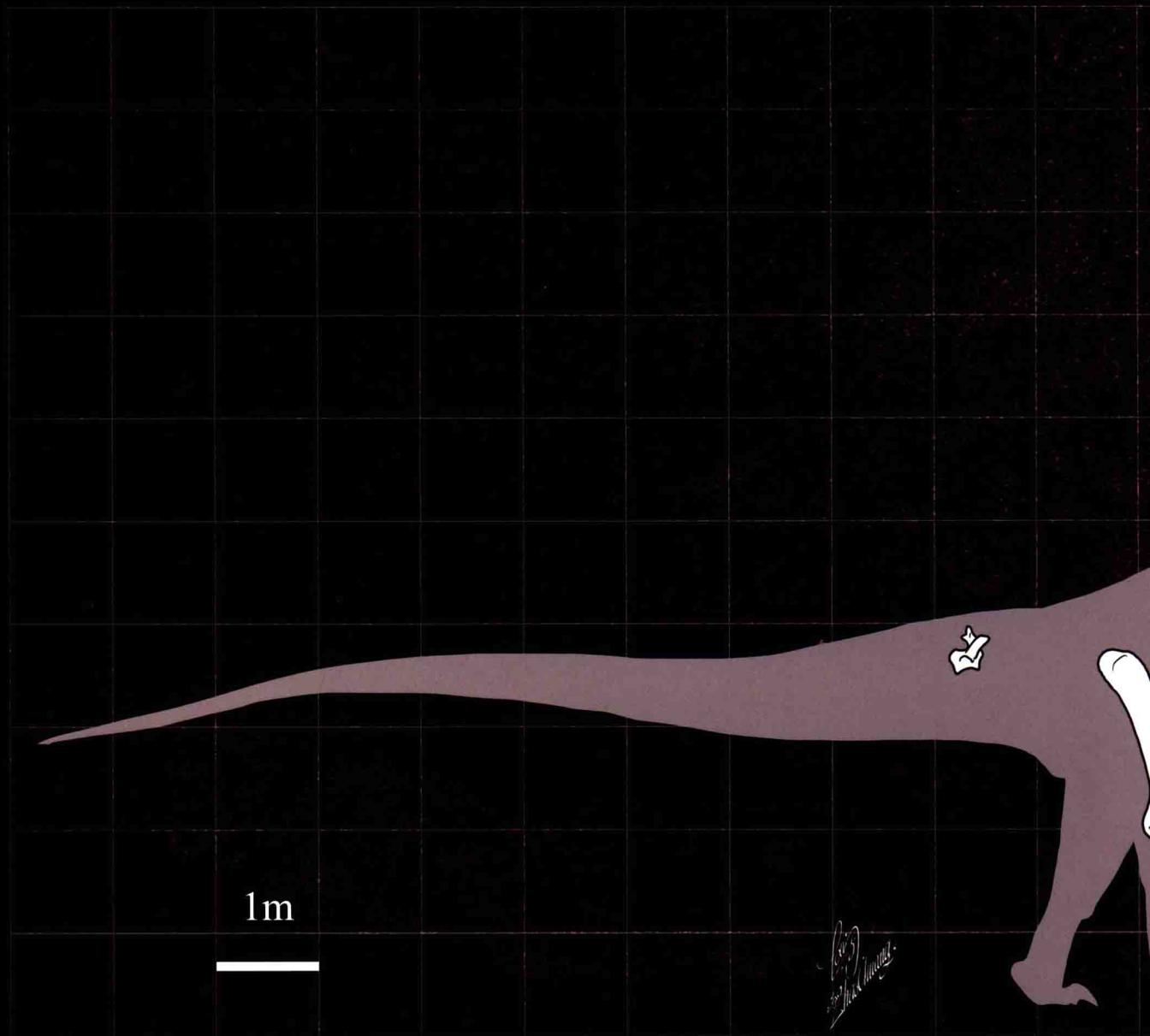
大小：体长约 26m

食性：植食

生存年代：早白垩世

化石产地：中国甘肃

命名者：尤海鲁，李大庆，周伶俐，季强



蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

蜥脚下目 Sauropoda

Taxonomic Name: *Daxiatitan binglingi* You et al., 2008

Etymology: The generic name means "Daxia giant".

The specific name is derived from Tibetan bingling, where its discovered site is next to Bingling Temple.

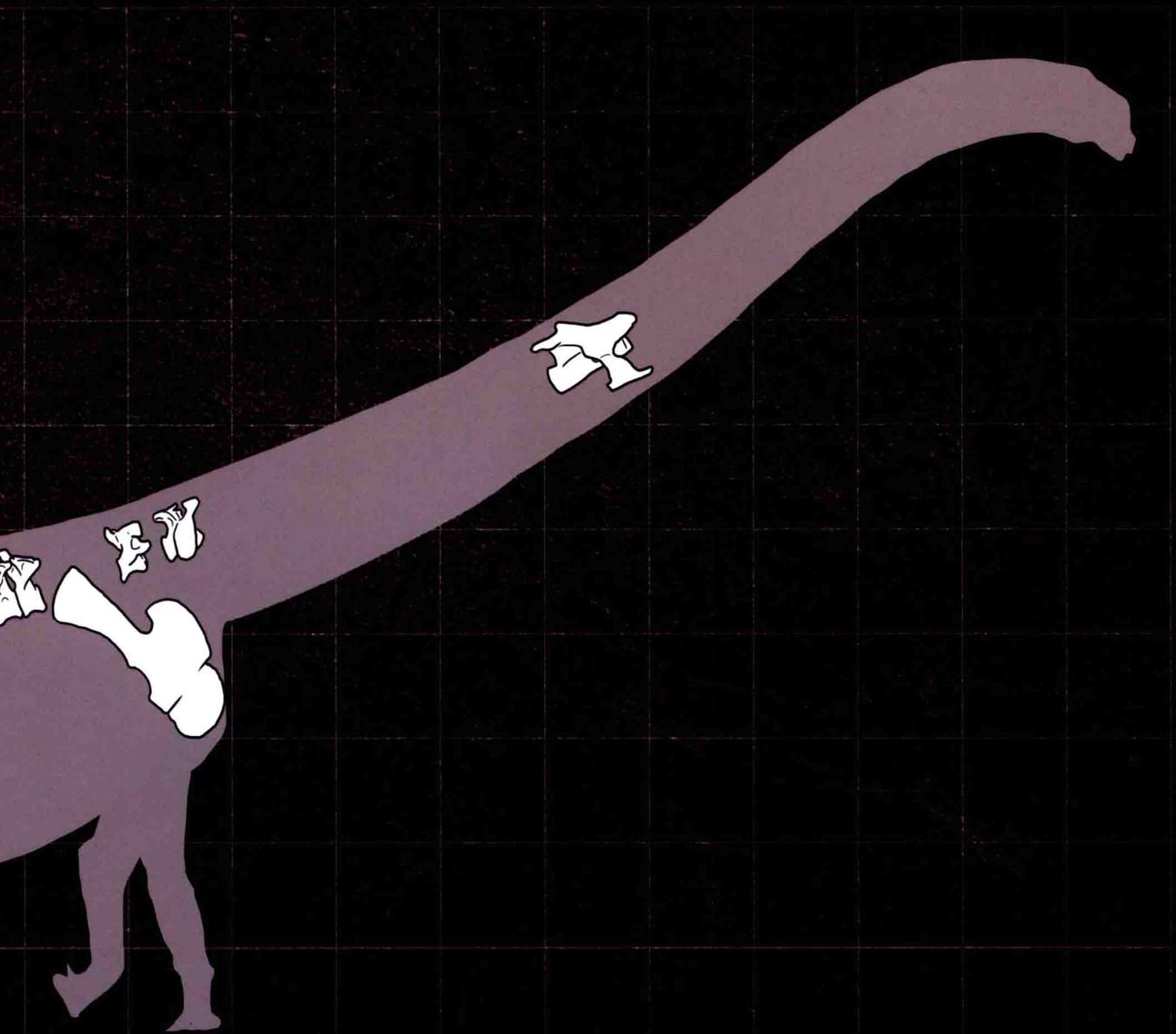
Body Size: around 26 meters long

Diet: Herbivore

Age: the Early Cretaceous

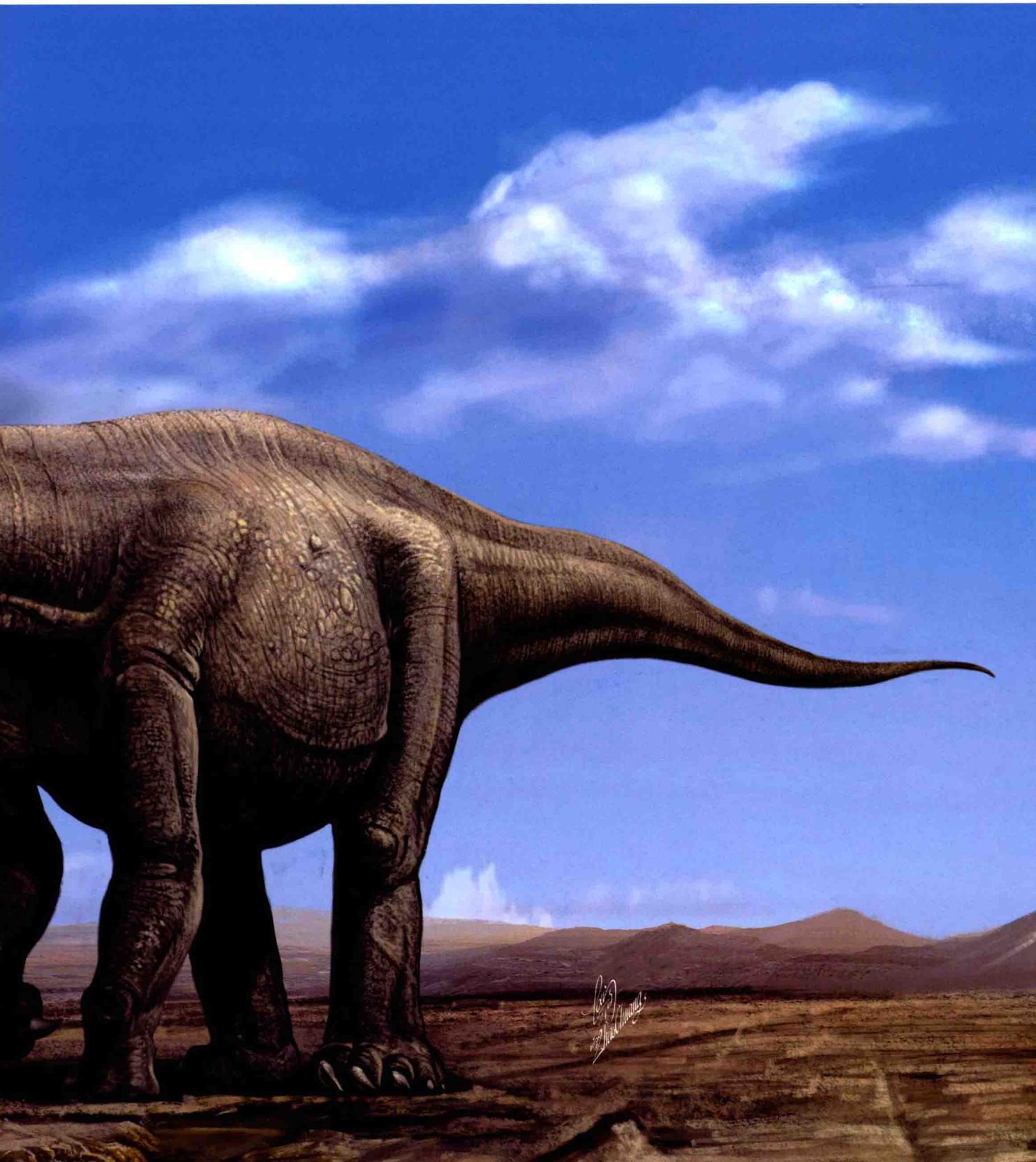
Locality: Gansu, China

First Described by: Hailu You, Daqing Li, Lingqi Zhou, Qiang Ji



Daxiatitan binglingi You et al., 2008





Euhelopus zdanskyi Wiman, 1929

中文名称：师氏盘足龙

学名：*Euhelopus zdanskyi* Wiman, 1929

释义：属名意为“出色的湿地的脚”。

种名献给奥地利古生物学家 Otto Zdansky。

大小：体长约 11m, 体重约 15000~20000kg

食性：植食

生存年代：早白垩世，距今约 1.3 亿年~1.12 亿年

化石产地：中国山东

命名者：Prof Carl Wiman

Taxonomic Name: *Euhelopus zdanskyi* Wiman, 1929

Etymology: The generic name means "true marsh foot".

The specific name honours the Paleontologist Otto Zdansky.

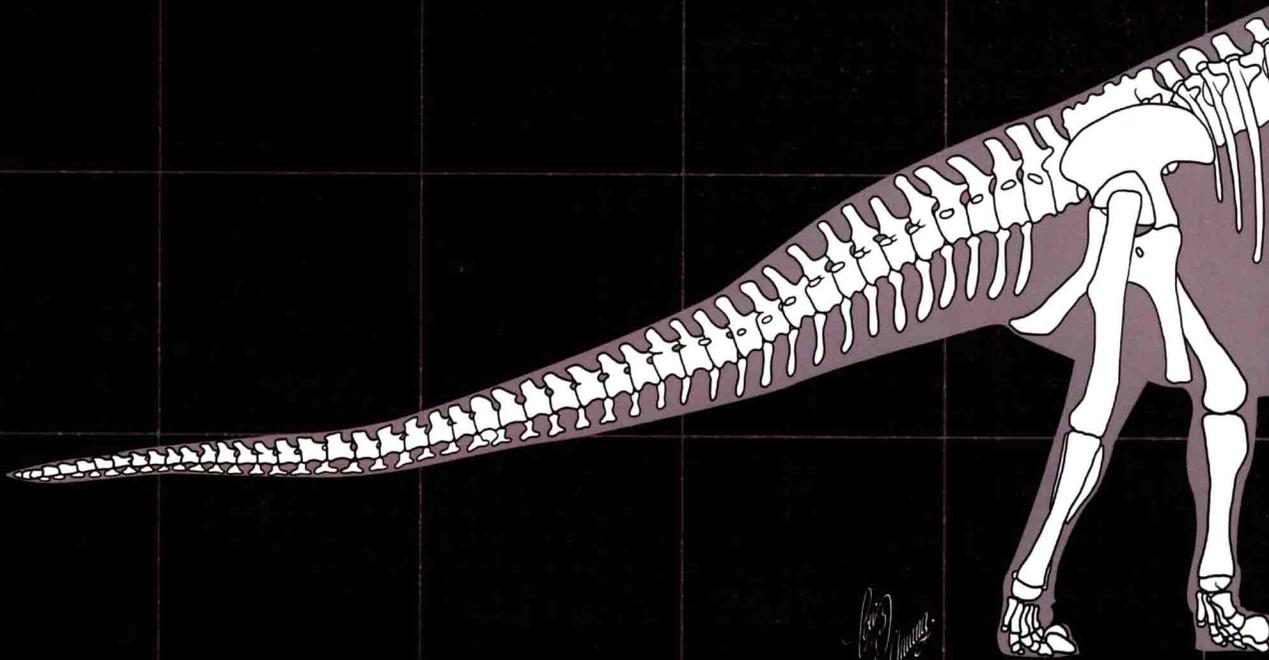
Body Size: around 11 meters long, with an estimated weight of 15000 to 20000 kg

Diet: Herbivore

Age: the Early Cretaceous, approximately 130 to 112 million years ago

Locality: Shandong, China

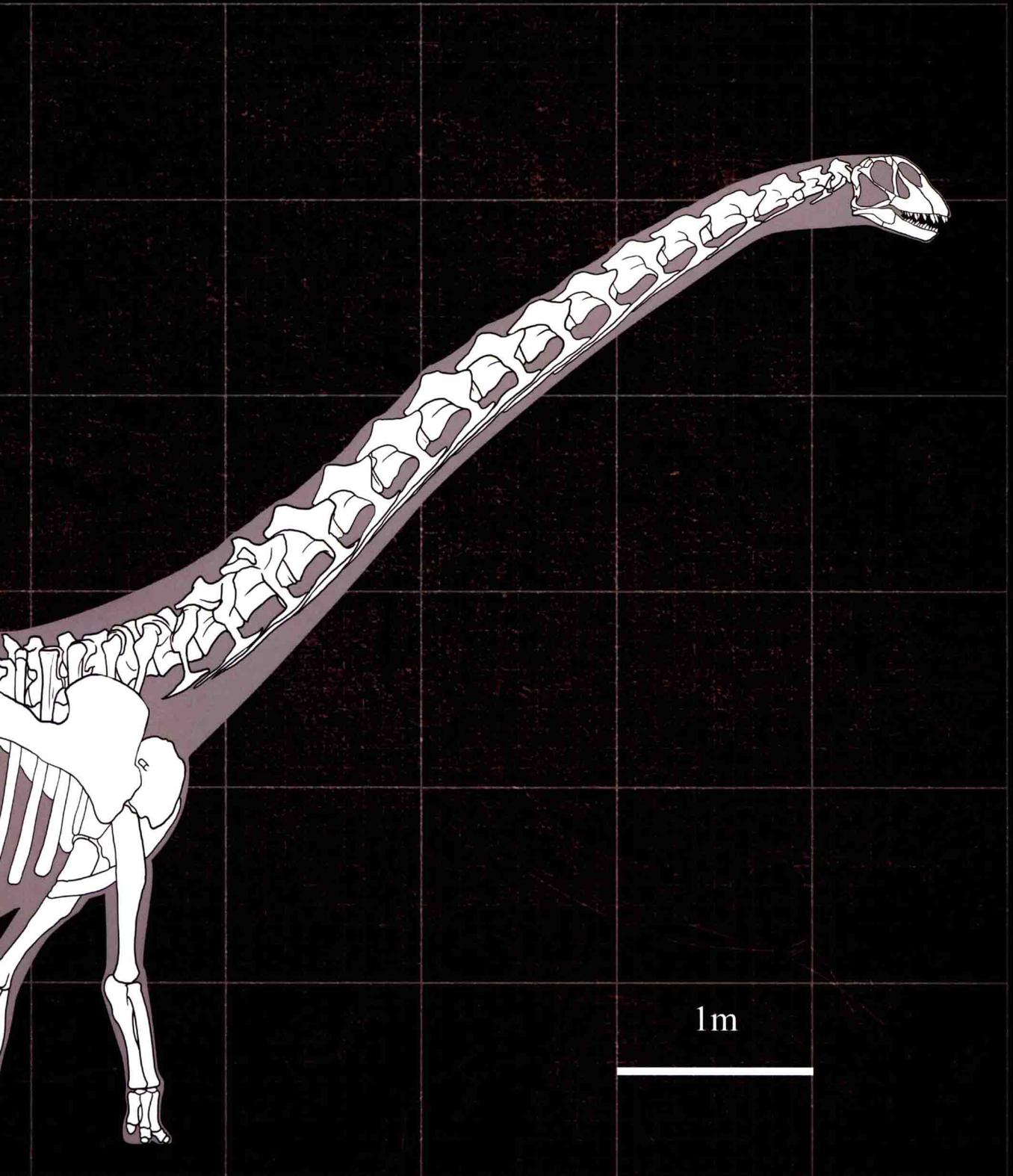
First Described by: Prof Carl Wiman



蜥臀目 Saurischia

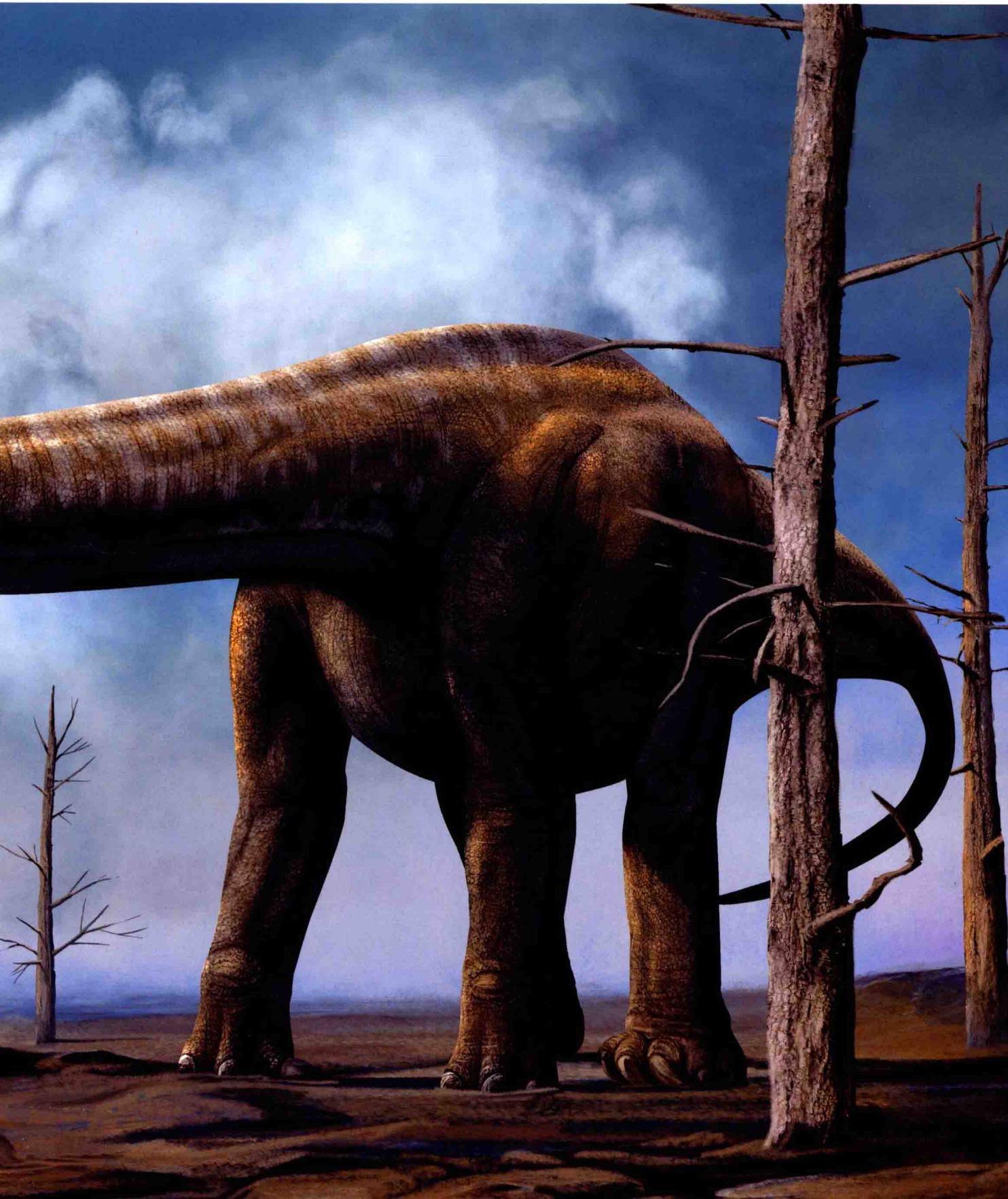
蜥脚形亚目 Sauropodomorpha

蜥脚下目 Sauropoda

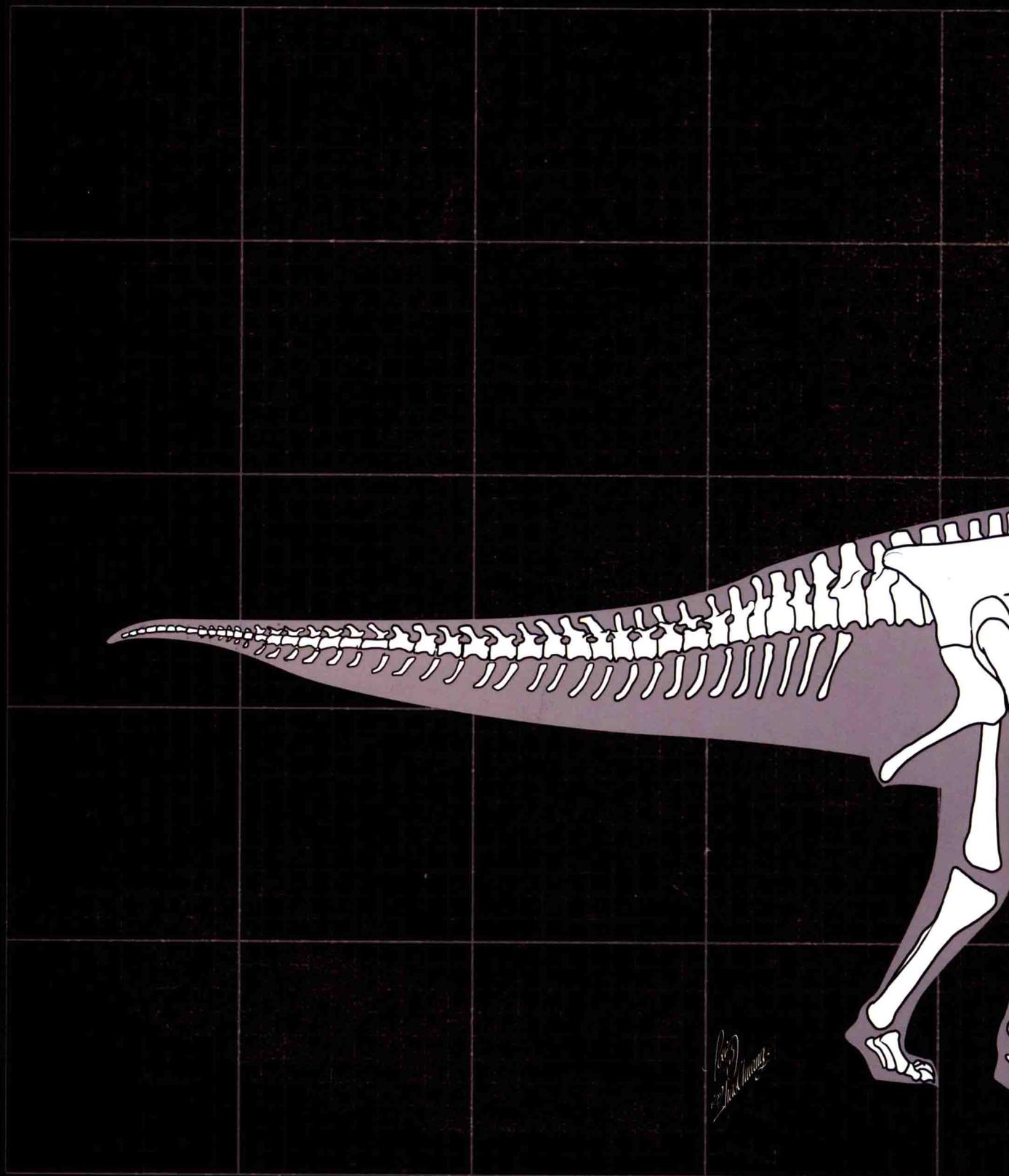


Euhelopus zdanskyi Wiman, 1929





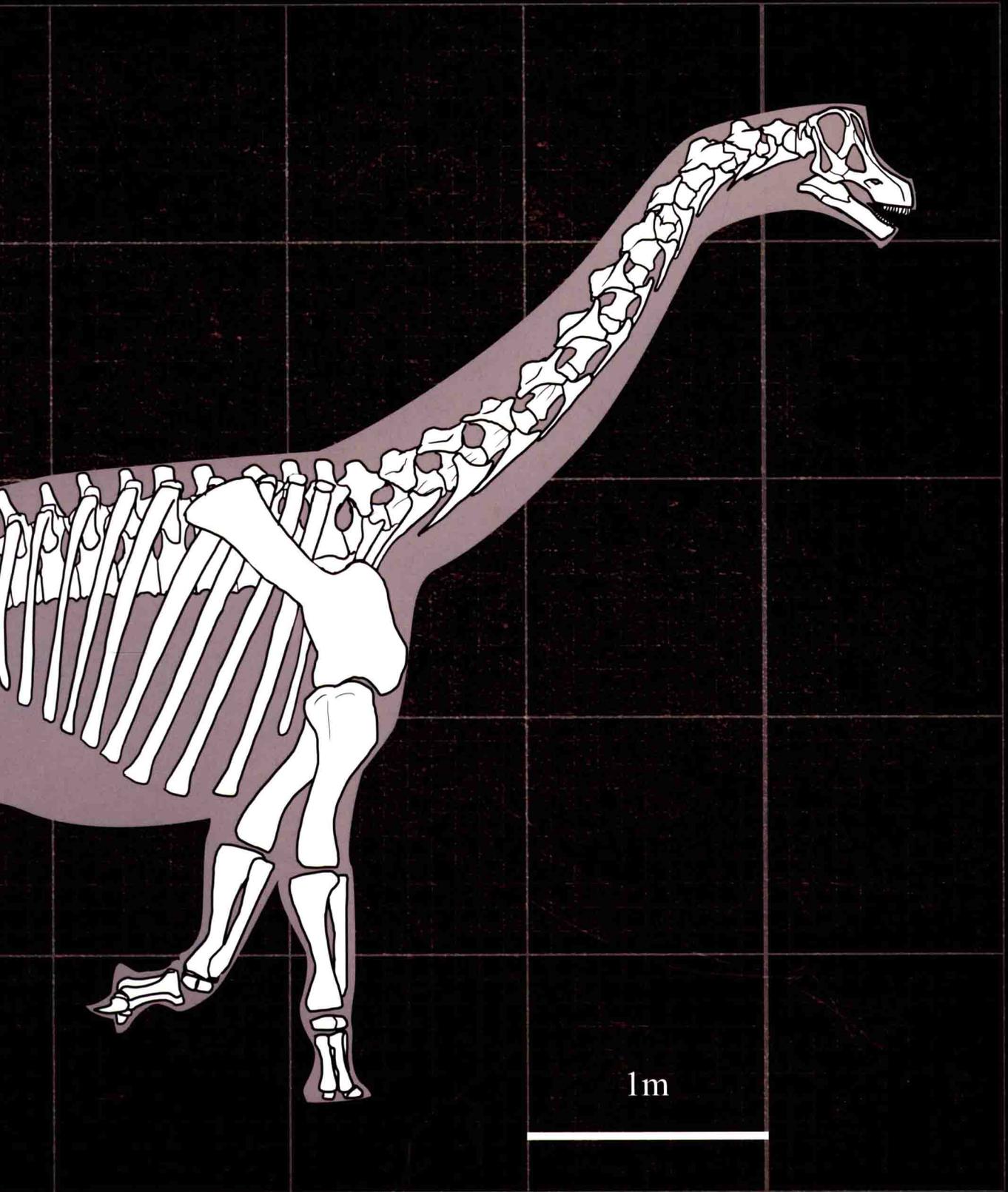
Sonidosaurus saihangaobiensis Xu et al., 2006



蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

蜥脚下目 Sauropoda



Sonidosaurus saihangaobiensis Xu et al., 2006



中文名称：赛罕高毕苏尼特龙

学名：*Sonidosaurus saihangaobiensis* Xu et al., 2006

释义：属名意为“发现于苏尼特的蜥蜴”。

种名指化石产地。

大小：体长约 9m

食性：植食

生存年代：晚白垩世

化石产地：中国内蒙古

命名者：徐星等

Taxonomic Name: *Sonidosaurus saihangaobiensis* Xu et al., 2006

Etymology: The generic name means "Sonid lizard".

The specific name refers to Saihangaobi formation in Sonid zuoqi, Inner Mongolia, China.

Body Size: around 9 meters long

Diet: Herbivore

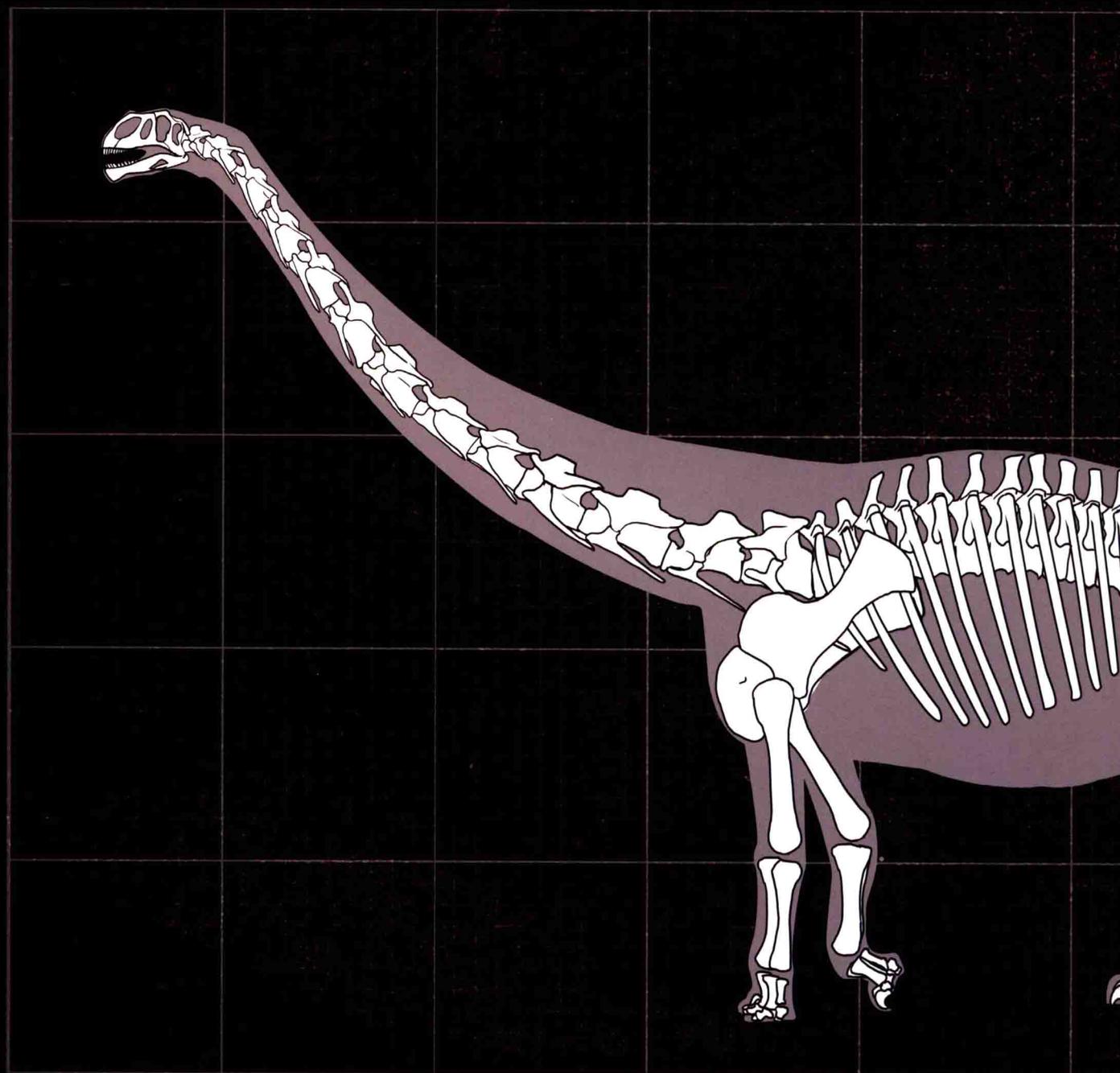
Age: the Late Cretaceous

Locality: Inner Mongolia, China

First Described by: Xing Xu etc

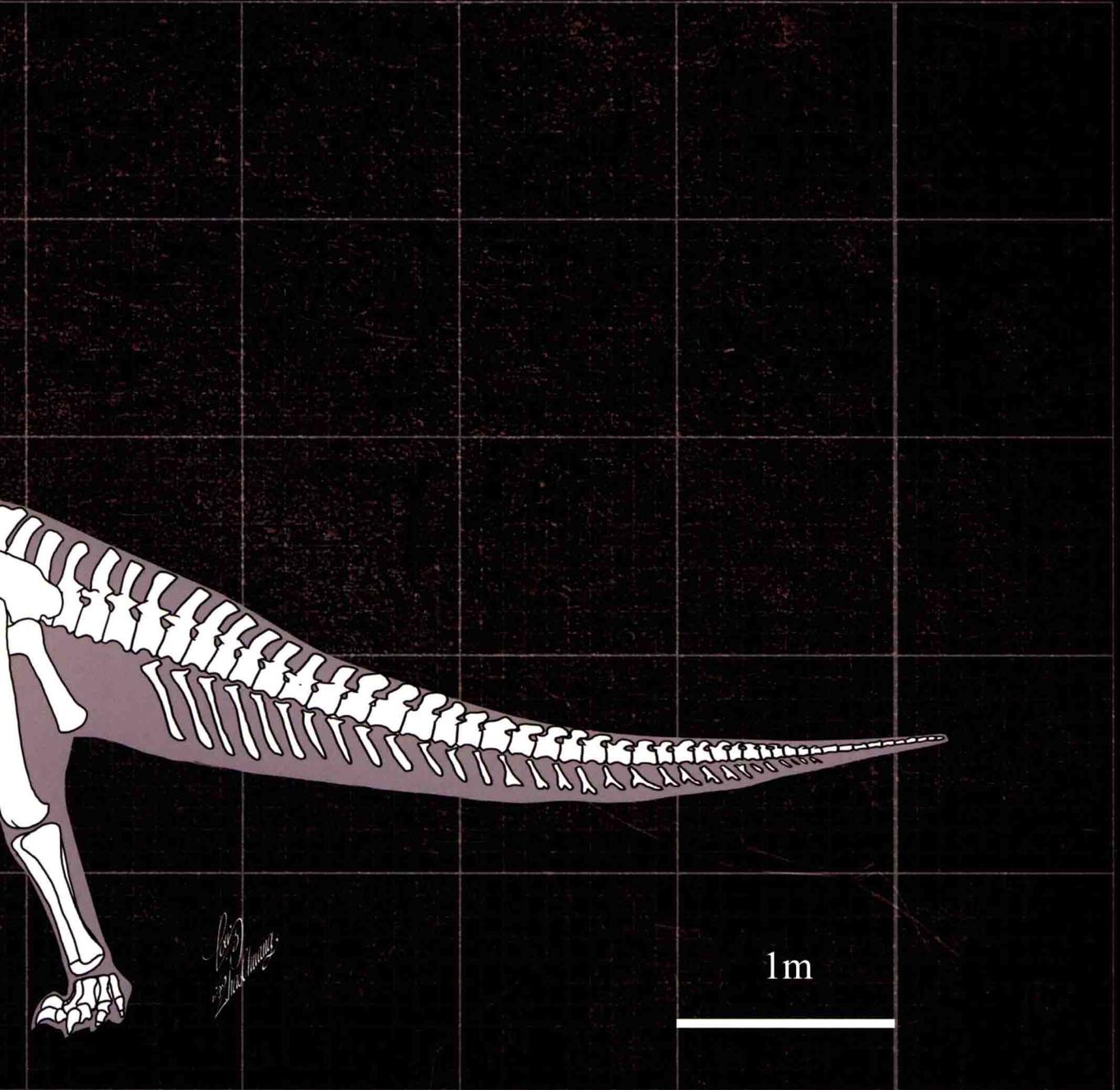


Yuanmousaurus jingyiensis Lü et al., 2006

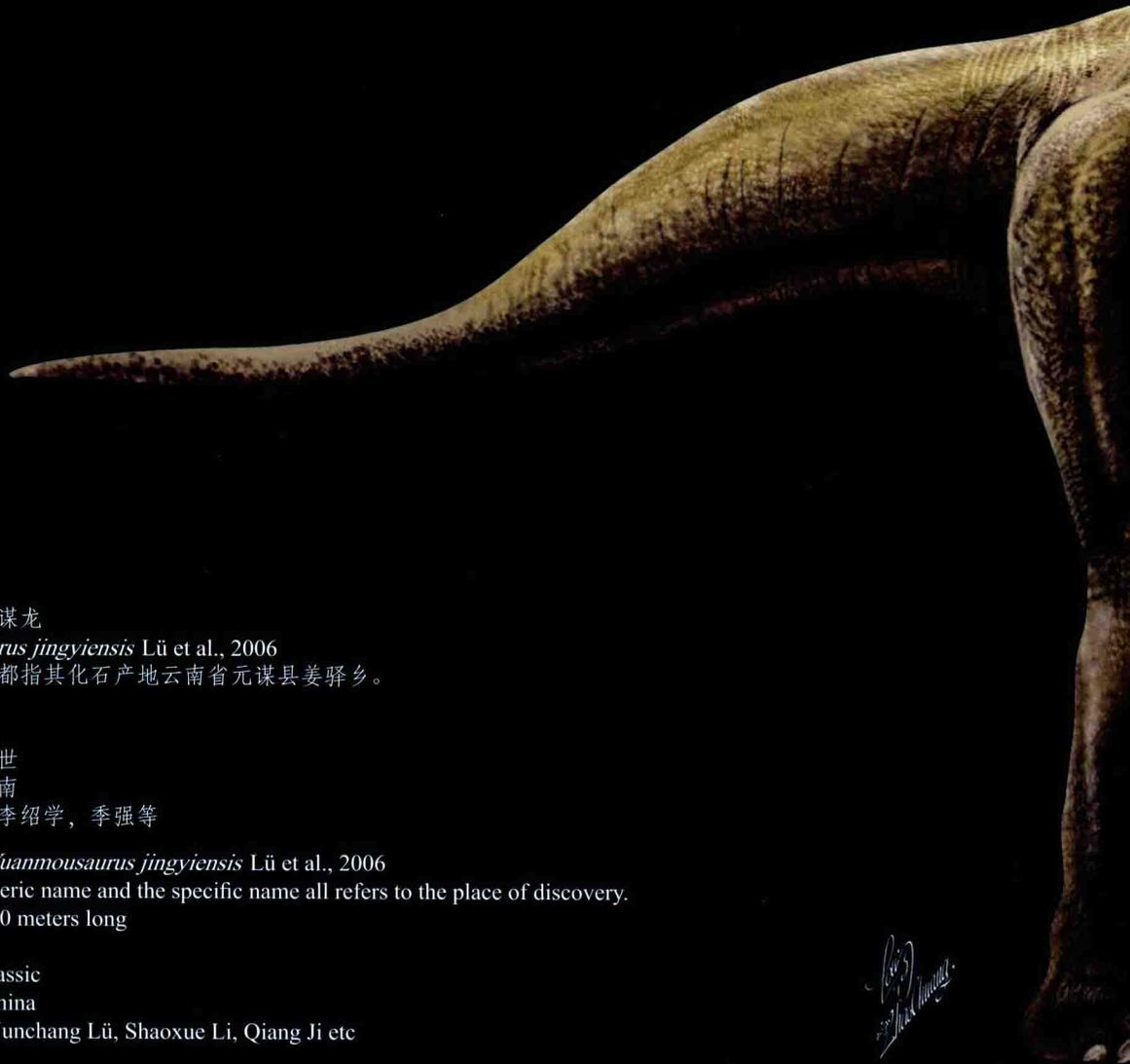


蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha
蜥脚下目 Sauropoda



Yuanmousaurus jingyiensis Lü et al., 2006



中文名称：姜驿元谋龙

学名：*Yuanmousaurus jingyiensis* Lü et al., 2006

释义：属名和种名都指其化石产地云南省元谋县姜驿乡。

大小：体长约 10m

食性：植食

生存年代：中侏罗世

化石产地：中国云南

命名者：吕君昌，李绍学，季强等

Taxonomic Name: *Yuanmousaurus jingyiensis* Lü et al., 2006

Etymology: The generic name and the specific name all refers to the place of discovery.

Body Size: around 10 meters long

Diet: Herbivore

Age: the Middle Jurassic

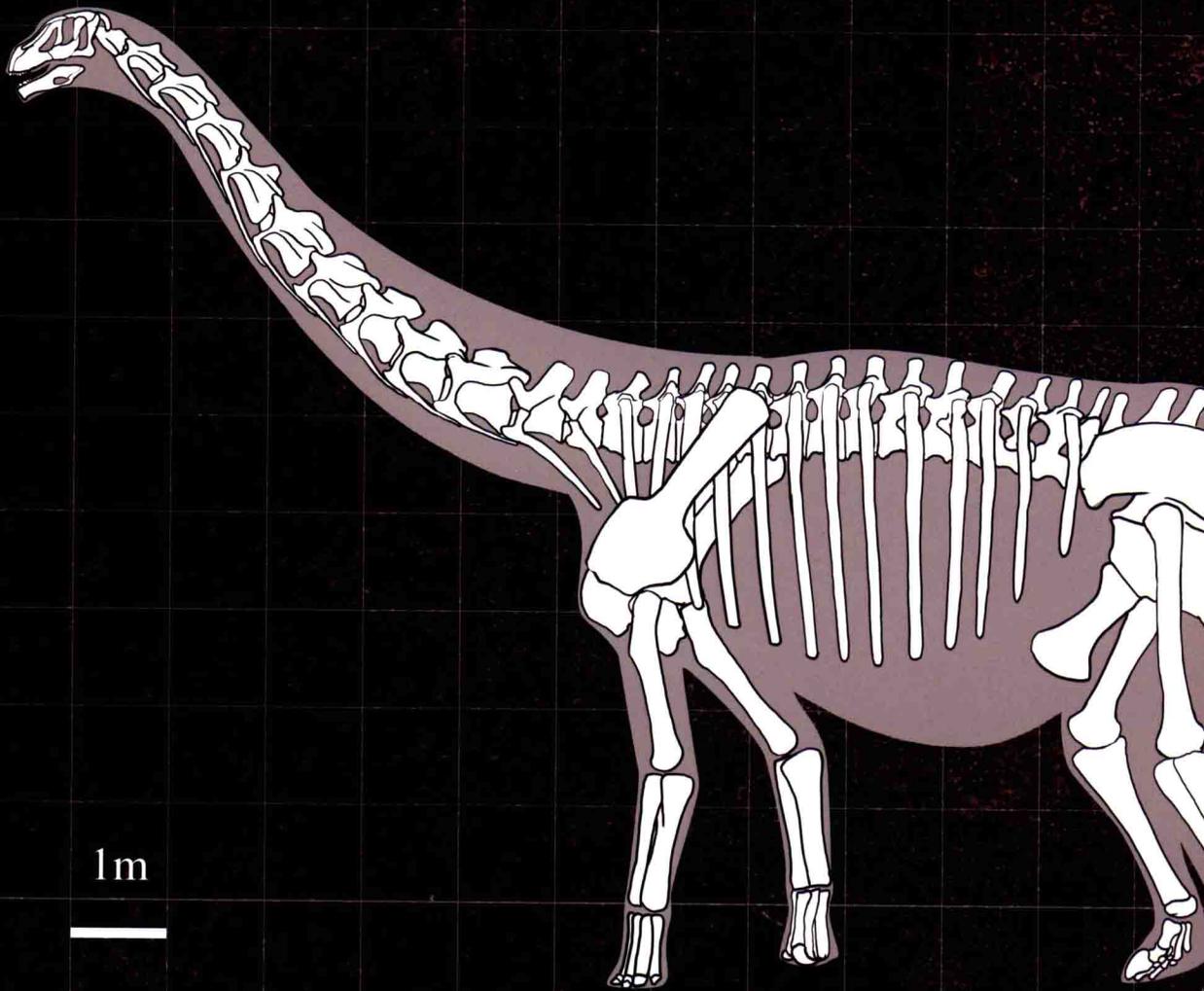
Locality: Yunnan, China

First Described by: Junchang Lü, Shaoxue Li, Qiang Ji etc

Handwritten signature and date:
2006 Junchang Lü et al.



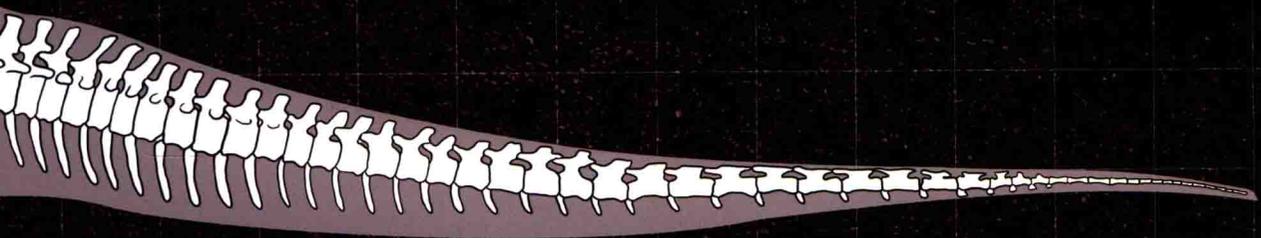
Nurosaurus qaganensis Dong et Li, 1992



蜥臀目 Saurischia

蜥脚形亚目 Sauropodomorpha

蜥脚下目 Sauropoda



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Michael J. Benton

Nurosaurus qaganensis Dong et Li , 1992

中文名称: 查干诺尔龙

学名: *Nurosaurus qaganensis* Dong et Li , 1992

释义: 以查干诺尔组地层为名。

大小: 体长约 27m, 高约 8m, 体重约 22700kg

食性: 植食

生存年代: 早白垩世

化石产地: 中国内蒙古

命名者: 董枝明, 李荣

Taxonomic Name: *Nurosaurus qaganensis* Dong et Li, 1992

Etymology: The generic name is derived from Chagannuoer geological formation, means "Chagannuoer lizard".

The specific name refers to Chagannuoer geological formation.

Body Size: around 27 meters long, 8 meters high, with an estimated weight of 22700 kg

Diet: Herbivore

Age: the Early Cretaceous

Locality: Inner Mongolia, China

First Described by: Zhiming Dong, Rong Li



董枝明
李荣



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达尔文计划：生命美术工程

“达尔文计划——生命美术工程”是人类社会针对地球已消失生命系统的一次大规模科学艺术实践。由科学艺术家赵闯先生与科普作家杨杨女士共同发起，联合全球多位著名科学家参与的古生物化石生物形象复原行动。项目启动几年来，完成了超过 1000 种古生物化石的生物形象的科学复原，近 500 种古生物化石骨骼结构的科学复原，数十种古生物化石生物形象立体复原，大量作品发表在包括英国《自然》杂志、美国《科学》杂志、美国科学院院刊等著名期刊，出版了数十种科普图书，举办了多次科学科普展览，引起了科学界的广泛关注。

本课题包含“古生物化石生物形象科学复原”、“古生物化石骨骼结构科学复原”、“古生物化石生物形象立体复原”、“古生物化石知识点编译”、“代表性古生物化石及物种的研究成果科普性描述”五个部分，每个部分又分为若干个专题。

“古生物化石生物形象科学复原”目前已经完成专题创作有：

- 《全球发现的代表性 <肉食龙下目> 恐龙化石生物形象科学复原》专题
- 《全球发现的代表性 <暴龙超科> 恐龙化石生物形象科学复原》专题
- 《全球发现的代表性 <镰刀龙超科> 恐龙化石生物形象科学复原》专题
- 《全球发现的代表性 <窃蛋龙下目> 恐龙化石生物形象科学复原》专题
- 《全球发现的代表性 <恐爪龙下目> 恐龙化石生物形象科学复原》专题
- 《全球发现的代表性 <蜥脚形亚目> 恐龙化石生物形象科学复原》专题
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- 《全球发现的代表性 <鸟脚下目> 恐龙化石生物形象科学复原》专题
- 《全球发现的代表性 <角龙下目> 恐龙化石生物形象科学复原》专题
- 《全球发现的其他代表性恐龙化石生物形象科学复原》专题
- 《全球发现的代表性史前水栖爬行动物化石生物形象科学复原》专题
- 《全球发现的代表性翼龙类化石生物形象科学复原》专题

“古生物化石骨骼结构科学复原”目前已经完成专题创作有：

- 《全球发现的代表性恐龙化石骨骼结构科学复原》专题
- 《全球发现的代表性古鸟化石骨骼结构科学复原》专题
- 《全球发现的代表性翼龙化石骨骼结构科学复原》专题
- 《全球发现的代表性史前水栖爬行动物化石骨骼结构科学复原》专题

“古生物化石生物形象立体复原” 目前已经完成专题创作有：

- 《中国十大恐龙化石生物形象复原雕像》专题
- 《著名古生物化石生物形象复原雕像》专题
- 《代表性古生物化石生物形象虚拟数字雕像》专题

“古生物化石知识点编译” 目前已经完成专题创作有：

- 《全球发现的代表性恐龙化石知识点编译》专题
- 《全球发现的代表性古鸟化石知识点编译》专题
- 《全球发现的代表性翼龙化石知识点编译》专题
- 《全球发现的代表性史前水栖爬行动物知识点编译》专题

“代表性古生物化石及物种的研究成果科普性描述” 目前已经完成专题创作有：

- 《代表性恐龙化石及物种的研究成果科普性描述》专题
- 《代表性古鸟化石的研究成果科普性描述》专题
- 《代表性翼龙化石及物种的研究成果科普性描述》专题
- 《代表性史前水栖爬行动物化石及物种的研究成果科普性描述》专题



Project Darwin: A nature science art project

Project Darwin is a large-scale nature science art creation project for the purpose of restoring the extinct biological systems on the planet. Initiated by science artist Mr. ZHAO Chuang and popular science writer Ms. YANG Yang, the project has been collaborating with many renowned scientists around the world to restore the images of prehistoric animals from fossils. Within a few years, the project has restored biological appearances of more than 1,000 prehistoric animals based on paleontological fossils, skeleton structures of more than 500 paleontological fossils, and 3D models of dozens of paleontological fossils. Many of the project's art works were published in global leading journals, such as the Science Magazine, the Nature Magazine, and the Proceedings of the National Academy of Sciences of the United States of America Journal. The project has also published dozens of popular science books, organized many science art exhibitions, and received wide recognition from the science community.

Five modules of the project:

- Restoring biological appearances of prehistoric animals based on paleontological fossils
- Restoring skeleton structures of prehistoric animals based on paleontological fossils
- Creating 3D models of prehistoric animals based on paleontological fossils
- Translating and compiling key knowledge of paleontology
- Scientific description of representative paleontological fossils and corresponding species

Completed works in restoring biological appearances of prehistoric animals based on paleontological fossils:

- Restoring biological appearances of representative Carnosauria dinosaur based on discovered fossils
- Restoring biological appearances of representative Tyrannosauroida dinosaur based on discovered fossils
- Restoring biological appearances of representative Therizinosauria dinosaur based on discovered fossils
- Restoring biological appearances of representative Oviraptorosauria dinosaur based on discovered fossils
- Restoring biological appearances of representative Deinonychosauria dinosaur based on discovered fossils
- Restoring biological appearances of representative Sauropodomorpha dinosaur based on discovered fossils
- Restoring biological appearances of representative Stegosauria dinosaur based on discovered fossils
- Restoring biological appearances of representative Ankylosauria dinosaur based on discovered fossils
- Restoring biological appearances of representative Ornithomimidae dinosaur based on discovered fossils
- Restoring biological appearances of representative Ceratopsia dinosaur based on discovered fossils
- Restoring biological appearances of other representative dinosaurs based on discovered fossils
- Restoring biological appearances of prehistoric marine reptile based on discovered fossils
- Restoring biological appearances of representative pterosauria based on discovered fossils

Completed works in restoring skeleton structures of prehistoric animals based on paleontological fossils:

Restoring skeleton structures of representative dinosaurs based on discovered fossils

Restoring skeleton structures of representative prehistoric birds based on discovered fossils

Restoring skeleton structures of representative pterosauria based on discovered fossils

Restoring skeleton structures of representative prehistoric marine reptile based on discovered fossils

Completed 3D models of prehistoric animals based on paleontological fossils:

3D models of ten representative Chinese dinosaurs based on discovered fossils

3D models of famous prehistoric animals based on discovered fossils

Digital 3D images of representative prehistoric animals based on discovered fossils

Completed works in translating and compiling key knowledge of paleontology:

Key knowledge of representative dinosaur fossils

Key knowledge of representative prehistoric bird fossils

Key knowledge of representative pterosauria fossils

Key knowledge of representative prehistoric marine reptile fossils

Completed scientific descriptions of representative paleontology fossils and corresponding species:

Scientific description of representative dinosaurs and the discovered fossils

Scientific description of representative prehistoric birds and the discovered fossils

Scientific description of representative pterosauria and the discovered fossils

Scientific description of representative prehistoric marine reptile and the discovered fossils