美丽硬骨舌鱼（亚洲龙鱼）

来自远古的骨舌鱼类

美丽硬骨舌鱼属于骨舌鱼目骨舌鱼科，主要分布于东南亚热带淡水河流、湖泊和沼泽环境中。其身体修长，覆盖大型鳞片，鳞片表面具有明显光泽；口部上翘，具有一对须，能够捕食鱼类和昆虫等。骨舌鱼类是一支古老的辐鳍鱼类，在中生代已经出现，并保留了一些早期硬骨鱼类的形态特征。现生骨舌鱼类为认识早期分化真骨鱼类的形态与生态特征提供了重要的比较材料。

Scleropages formosus(Asian Arowana)

An Ancient Lineage of Bony-Tongue Fishes

The Asian arowana belongs to the order Osteoglossiformes and the family Osteoglossidae. It inhabits tropical freshwater environments in Southeast Asia, including rivers, lakes, and swamps. Its elongate body is covered with large, lustrous scales. The mouth is upturned, and a pair of barbels is present at the tip of the lower jaw. It feeds on fishes, insects and other small animals. Bony-tongue fishes represent an ancient lineage of ray-finned fishes that first appeared during the Mesozoic and retain several morphological features of early bony fishes. Living bony-tongue fishes provide important comparative material for understanding the morphology and ecology of early-diverging teleost lineages.

中华金龙鱼

5600万年前的古代龙鱼

中华金龙鱼是发现于中国早始新世地层的骨舌鱼类化石，属于骨舌鱼目骨舌鱼科。产自湖南湘乡和湖北松滋的化石保存精美，为研究金龙鱼类的演化历史提供了重要证据。研究表明，硬骨舌鱼属与南美骨舌鱼属的分化时间可追溯至约5600万年前。这一发现不仅将现生硬骨舌鱼属的演化历史延伸至新生代早期，也为理解骨舌鱼类跨越不同大陆的分布格局及其生物地理历史提供了重要线索。

Scleropages sinensis

An Ancient Arowana from 56 Million Years Ago

Scleropages sinensis is a fossil bony-tongue fish discovered from the Early Eocene deposits of China and belongs to the family Osteoglossidae within the order Osteoglossiformes. The exceptionally preserved fossils from Xiangxiang, Hunan Province, and Songzi, Hubei Province, provide important evidence for understanding the evolutionary history of arowanas. Research indicates that the divergence between the genus Scleropages and the South American osteoglossid genus Osteoglossum can be traced back to approximately 56 million years ago. This discovery extends the evolutionary history of living arowanas into the Early Cenozoic and provides important clues for understanding the intercontinental distribution patterns and biogeographic history of bony-tongue fishes.

多鳍鱼

早期辐鳍鱼类的现生遗存

多鳍鱼是现生辐鳍鱼类中较早分化的代表类群之一，保留了许多独特的形态特征，如菱形硬鳞、背部由多个小鳍组成的背鳍，以及能够辅助空气呼吸的肺样结构。这些特征为研究早期辐鳍鱼类的身体构型、生态适应和演化历史提供了重要线索。

Polypterus

A Living Relict of an Early-Diverging Actinopterygian Lineage

Bichirs (*Polypterus*) are among the earliest-diverging lineages of extant ray-finned fishes and retain several distinctive morphological features, including rhomboid ganoid scales, a dorsal fin composed of multiple separate finlets, and paired lungs used for air breathing. These features provide important clues to the body plan, ecological adaptations, and evolutionary history of early actinopterygians.

光泽肋鳞鱼

早期可能具有卵胎生特征的新鳍鱼类

来自云南罗平生物群的光泽肋鳞鱼是一类生活于中三叠世的早期新鳍鱼类。其保存精美的头骨和身体结构，为研究早期新鳍鱼类的形态演化和系统关系提供了重要证据。相关研究显示，该类群可能具有卵胎生繁殖特征，为认识中生代鱼类繁殖策略的多样性提供了重要线索。

Peltopleurus nitidus

An Early Neopterygian Fish with Possible Ovoviviparous Reproduction

Peltopleurus nitidus from the Luoping Biota of Yunnan was an early neopterygian fish that lived during the Middle Triassic. Its exquisitely preserved skull and body provide important evidence for the morphological evolution and phylogenetic relationships of early neopterygians. Related studies suggest that this taxon may have exhibited ovoviviparous reproduction, offering an important clue to the diversity of reproductive strategies among Mesozoic fishes.

舌形贝

延续数亿年的古老腕足动物

舌形贝又称海豆芽，是一类演化历史悠久的腕足动物，外形具有类似贝壳的两片壳体，但与双壳类动物亲缘关系较远。它们通常利用肉质柄固着于海底，通过带有纤毛的腕捕获水中的微小颗粒进行滤食。舌形贝的化石记录可追溯至古生代，是研究腕足动物长期演化稳定性的重要代表。

Lingula

An Ancient Brachiopod Lineage Persisting for Hundreds of Millions of Years

Lingulid brachiopods, commonly known as “tongue shells,” are a group of brachiopods with a long evolutionary history. Although their shells resemble those of bivalves, they are only distantly related to true bivalve mollusks. They typically attach themselves to the seafloor using a fleshy pedicle and use ciliated lophophores to capture microscopic particles suspended in the water for filter feeding. The fossil record of lingulid brachiopods extends back to the Paleozoic, making them important representatives for understanding long-term evolutionary stability in brachiopods.

肺鱼

连接水生脊椎动物与陆生四足动物的肉鳍鱼类

肺鱼是现生仅存的两大肉鳍鱼类支系之一，保留了许多早期肉鳍鱼类的形态特征。早期肺鱼类在泥盆纪已经出现，并具有与现代肺鱼相似的齿板和偶鳍结构。经过漫长演化，肺鱼保留了一些祖先型特征，因此常被称为“活化石”。它们不仅记录了肉鳍鱼类的演化历史，也为研究鱼类向四足动物演化过程中的形态变化提供了重要参考。

Dipnoi

Sarcopterygians Connecting Aquatic Vertebrates and Terrestrial Tetrapods

Lungfishes represent one of the two surviving lineages of lobe-finned fishes and retain many morphological features of early sarcopterygians. Early lungfishes appeared during the Devonian and possessed tooth plates and paired fins similar to those of living lungfishes. Through a long evolutionary history, lungfishes have retained several ancestral characteristics and are therefore often referred to as “living fossils.” They not only preserve important information about the evolutionary history of lobe-finned fishes but also provide valuable insights into the morphological transitions associated with the origin of tetrapods.

双翼鱼

泥盆纪早期肺鱼类的代表

肺鱼类起源于泥盆纪早期，并在随后的演化过程中迅速辐射，成为泥盆纪最具多样性的肉鳍鱼类类群之一。双翼鱼作为早期肺鱼类代表，展示了这一类群在形态和生态适应方面的早期探索。肺鱼类在演化过程中发展出多样化的摄食方式和身体结构，逐渐占据不同水生生态环境，为理解肉鳍鱼类早期演化和生态扩张提供了重要证据。

Dipterus

An Early Representative of Devonian Lungfishes

Lungfishes originated during the Early Devonian and underwent rapid diversification thereafter, becoming one of the most diverse groups of lobe-finned fishes during the Devonian. As a representative of early lungfishes, *Dipterus* provides important insights into the early morphological and ecological adaptations of this lineage. Throughout their evolutionary history, lungfishes developed diverse feeding strategies and body forms, allowing them to occupy a variety of aquatic environments. *Dipterus* offers important evidence for understanding the early evolution and ecological expansion of lobe-finned fishes.

早期爬行动物

二叠纪爬行动物的多样化探索

二叠纪爬行动物已经展现出多样化的身体结构和生态适应。它们的头骨、牙齿和颌部结构反映了不同生态环境下的摄食策略。部分早期爬行类及其近缘类群呈现出与现代蜥蜴相似的身体特征，为研究爬行动物身体结构演化和生态分化提供了重要证据。

Early Reptile

The Diversification of Permian Reptiles

Permian reptiles had already evolved diverse body forms and ecological adaptations. Their skulls, teeth, and jaw structures reflect different feeding strategies associated with various environments. Some early reptiles and their close relatives exhibited morphological features similar to those of modern lizards, providing important evidence for understanding the evolution of reptilian body structures and ecological diversification.

鲟鱼

延续古老形态的鲟形鱼类

鲟鱼是现生鲟形目鱼类的代表，保留了许多这一古老鱼类类群的典型形态特征。中国侏罗纪和白垩纪地层中发现的北票鲟科化石，为研究鲟形目的早期演化提供了重要证据。这些中生代鲟形类已经具有延长的吻部、异尾和骨板等特征，与现代鲟鱼共享许多形态结构。鲟形目漫长的演化历史展示了辐鳍鱼类适应不同水生环境的多样化方式。

Acipenseriformes

An Acipenseriform Fish Retaining an Ancient Body Plan

Sturgeons represent the living members of the order Acipenseriformes and retain many characteristic features of this ancient fish lineage. Fossils of Peipiaosteidae discovered from Jurassic and Cretaceous deposits in China provide important evidence for understanding the early evolution of acipenseriform fishes. These Mesozoic acipenseriforms already possessed characteristic features such as an elongated snout, a heterocercal tail, and bony plates, sharing many morphological traits with modern sturgeons. The long evolutionary history of Acipenseriformes demonstrates the diverse ways in which ray-finned fishes have adapted to aquatic environments.

长背鳍燕鲟

现代鲟形鱼类的远古近亲

燕鲟是一类生活于早白垩世淡水湖泊中的早期鲟形鱼类，体长可达约45厘米。其最显著的特征是异常延长的背鳍，背鳍具有大量鳍条，形成独特的身体构型。与现代鲟形类相比，燕鲟保留了更多早期鲟形鱼类的骨骼特征，并在鳍条等结构中保存了一些古老特征。该类群为研究鲟形鱼类早期演化、身体结构变化及淡水生态适应提供了重要证据。

Yanosteus longidorsalis

An Ancient Relative of Modern Sturgeons

Yanosteus was an early acipenseriform fish that inhabited freshwater lakes during the Early Cretaceous and reached approximately 45 cm in length. Its most distinctive feature was an exceptionally elongated dorsal fin composed of numerous fin rays, forming a unique body configuration. Compared with modern acipenseriform fishes, *Yanosteus* retained more ancestral skeletal features of early acipenseriforms and preserved primitive characteristics in structures such as its fin rays. This taxon provides important evidence for understanding the early evolution, morphological transformation, and freshwater ecological adaptations of acipenseriform fishes.

古巴骨雀鳝

延续至今的古老铰齿鱼类

古巴骨雀鳝是雀鳝科中体型较大的物种之一，也是现生较古老的辐鳍鱼类。它身体细长，吻部延长，口中具有排列紧密的尖锐牙齿，全身覆盖坚硬的菱形硬鳞，展现出雀鳝类独特的适应。古巴雀鳝属于伏击型捕食者，主要捕食鱼类及其他水生动物。其鳔具有丰富的血管结构，能够辅助空气呼吸，使其可以适应部分低氧水域环境。雀鳝类起源悠久，在中生代已经出现，并保留了许多独特的形态特征，为研究辐鳍鱼类的演化历史和生态适应提供了重要线索。

Atractosteus tristoechus

An Ancient Gars Lineage Surviving Today

The Cuban gar is one of the larger representatives of the family Lepisosteidae and one of the most ancient lineages of living ray-finned fishes. It has an elongated body, an extended snout, and densely arranged sharp teeth, with the entire body covered by hard rhomboid ganoid scales, displaying the distinctive adaptations of gars. The Cuban gar is an ambush predator that primarily feeds on fishes and other aquatic animals. Its swim bladder contains a rich network of blood vessels and can function as an accessory respiratory organ, allowing it to tolerate low-oxygen aquatic environments. Gars have a long evolutionary history, first appearing in the Mesozoic, and have retained many distinctive morphological features. They provide important insights into the evolutionary history and ecological adaptations of ray-finned fishes.

圆尾滇东鱼

揭示雀鳝类演化早期形态的铰齿鱼类

圆尾滇东鱼是中三叠世早期铰齿鱼类代表之一，展示了新鳍鱼类早期演化阶段的身体特征。它身体呈长梭形，尾鳍后缘近圆形，全身覆盖坚硬的菱形鳞片，最大体长约5厘米。作为罗平生物群中的小型辐鳍鱼类，圆尾滇东鱼为研究铰齿鱼类的起源、早期形态演化以及雀鳝类相关支系的发展历史提供了重要证据。

Diandongichthys ocellatus

A Ginglymodian Revealing Early Morphology Related to the Gar Lineage

Diandongichthys ocellatus is an early ginglymodian fish from the Middle Triassic and represents one of the early members of the lineage related to modern gars. It had an elongated fusiform body, a nearly rounded posterior margin of the caudal fin, and a body covered with hard rhomboid ganoid scales, reaching a maximum length of approximately 5 cm. As a small ray-finned fish from the Luoping Biota, *Diandongichthys ocellatus* provides important evidence for understanding the origin and early morphological evolution of ginglymodians, as well as the diversification history of gar-related lineages.

米氏海蝎

古生代海洋中的节肢动物捕食者

米氏海蝎是一类生活于志留纪晚期海洋和近岸环境中的海蝎类动物，属于广翅鲎类。它具有分节明显的身体、发达的附肢和扁平化的尾部结构，是古生代水生生态系统中的重要捕食者。米氏海蝎是已知最具代表性的海蝎类之一，其化石记录展示了早期螯肢动物的形态多样性和生态适应，为研究古生代海洋生态系统以及螯肢动物演化历史提供了重要证据。

Hughmilleria

An Arthropod Predator of Paleozoic Seas

Hughmilleria was a eurypterid that inhabited marine and nearshore environments during the Late Silurian. It possessed a segmented body, well-developed appendages, and a flattened tail structure, making it an important predator in Paleozoic aquatic ecosystems. As one of the most representative eurypterids, *Hughmilleria* reveals the morphological diversity and ecological adaptations of early chelicerates, providing important evidence for understanding Paleozoic marine ecosystems and the evolutionary history of chelicerates.

银杏

古老银杏类植物谱系的唯一现生代表

银杏是银杏类植物中现存唯一物种，也是银杏目延续至今的唯一代表。它属于古老的裸子植物谱系，具有独特的扇形叶片、典型的二叉分脉结构以及雌雄异株的繁殖特征。银杏类植物曾广泛分布于中生代陆地生态系统，而现代银杏保留了这一古老类群的重要形态特征。由于其悠久的演化历史和独特的生物学特征，银杏常被称为“活化石”。如今，原产于中国的银杏，并已被广泛栽培于世界各地。

Ginkgo biloba

The Only Living Representative of an Ancient Ginkgo Lineage

Ginkgo is the only living species of the ginkgo lineage and the sole surviving representative of the order Ginkgoales. It belongs to an ancient lineage of gymnosperms and is characterized by its distinctive fan-shaped leaves, dichotomous venation, and dioecious reproductive system. Ginkgoales were once widely distributed in terrestrial ecosystems during the Mesozoic, and modern ginkgo retains many important morphological features of this ancient group. Due to its long evolutionary history and unique biological characteristics, ginkgo is often referred to as a “living fossil.” Today, ginkgo is native to China and has been widely cultivated around the world.

银杏类植物（化石银杏类）

穿越亿年的扇形叶

银杏类植物是一支古老的裸子植物谱系，在中生代曾广泛分布于全球陆地生态系统，并在侏罗纪和白垩纪达到繁盛。约1.7亿年前的银杏类化石已经具有与现代银杏相似的扇形叶结构及部分生殖特征，展示了这一类群长期保守的形态特征。通过研究银杏化石，可以了解古植物群落组成、裸子植物演化以及中生代陆地生态系统的变化。

Ginkgoales

Fan-Shaped Leaves Across Deep Time

Ginkgoales represent an ancient lineage of gymnosperms that were widely distributed in terrestrial ecosystems during the Mesozoic and reached their greatest diversity during the Jurassic and Cretaceous. Fossil ginkgoaleans from approximately 170 million years ago already possessed fan-shaped leaves and some reproductive features similar to those of modern ginkgo, demonstrating the long-term morphological conservatism of this lineage. The study of fossil ginkgoaleans provides important insights into ancient plant communities, the evolution of gymnosperms, and changes in Mesozoic terrestrial ecosystems.

海百合

延续至今的“海中花朵”

海百合并不是植物，而是一类古老的棘皮动物，与海星、海胆等是近亲。它们具有从身体中央向外伸展的羽状腕，腕上密布细小分枝，可以展开成花朵般的形态，从水流中过滤浮游生物和有机颗粒作为食物。今天仍生活在深海中的海百合保留着许多祖先特征，与远古化石惊人相似。

Crinoidea

The “Flowers of the Sea” Surviving to the Present

Crinoids are not plants but an ancient group of echinoderms closely related to starfish and sea urchins. They possess feather-like arms extending outward from the central body, with numerous small branches along the arms. These structures can spread out into a flower-like shape and capture plankton and organic particles from the water as food. Modern crinoids still living in deep-sea environments retain many ancestral features and show remarkable similarities to ancient fossil crinoids.

许氏创孔海百合

花朵形态的棘皮动物

海百合是一类古老的海生棘皮动物，早在约4.8亿年前的奥陶纪就已出现，并在古生代海洋中广泛繁盛。许多古代海百合具有细长的茎，顶端连接杯状的萼和向外展开的羽状腕，整体形态宛如盛开的花朵，因此得名“海百合”。

Traumatocrinus hsui

A Flower-Shaped Echinoderm

Crinoids are an ancient group of marine echinoderms that first appeared during the Ordovician, approximately 480 million years ago, and flourished widely in Paleozoic seas. Many ancient crinoids possessed slender stalks connected to cup-shaped calyces, with feather-like arms extending outward from the top. Their overall appearance resembled blooming flowers, giving rise to the name “sea lilies.”

弓鳍鱼

延续至今的古老全骨鱼类

弓鳍鱼属是弓鳍鱼科现生唯一的属，分布于北美洲。弓鳍鱼科的化石记录可追溯至晚侏罗世，是延续至今的古老全骨鱼类支系。现生弓鳍鱼为淡水鱼类，具有基部很长的背鳍、短的异尾型尾鳍以及大块中央喉板骨。其鳔具有呼吸功能，可作为辅助呼吸器官利用空气。这些独特的结构特征保留在今天的弓鳍鱼身上，使我们得以观察这一古老鱼类支系的现生代表。

Amia

An Ancient Holostean Lineage Surviving Today

The genus *Amia* is the only living genus of the family Amiidae and occurs in North America. The fossil record of Amiidae extends back to the Late Jurassic, representing an ancient holostean lineage that survives today. Living bowfins are freshwater fishes characterized by a long-based dorsal fin, a short heterocercal caudal fin, and a large median gular plate. Their swim bladder is capable of respiratory function and can serve as an accessory organ for air breathing. These distinctive features are retained in living bowfins, providing a modern representative of this ancient lineage.

拉蒂迈鱼

分类： 脊椎动物 肉鳍鱼类 空棘鱼类
时代： 现生
属性： 浸制标本

空棘鱼类唯一现生代表

拉蒂迈鱼是空棘鱼类目前唯一存活至今的代表，属于肉鳍鱼类，现存一属两种。1938年，科学家在非洲东海岸首次发现活体拉蒂迈鱼，此前人们曾认为空棘鱼类已在白垩纪末灭绝，这一发现改变了对该类群演化历史的认识。拉蒂迈鱼保留了许多与古代空棘鱼类化石相似的形态特征，例如肉质偶鳍和特殊的身体结构，因此常被称为“活化石”。它为研究肉鳍鱼类演化以及鱼类向四足动物演化前后的形态变化提供了重要线索。

Latimeria

Classification: Vertebrata Sarcopterygii Actinistia
Age: Recent
Status: Fluid-preserved specimen

The Only Living Representative of Coelacanths

Latimeria is the only surviving representative of coelacanths, a group of lobe-finned fishes, with one living genus and two extant species. In 1938, a living coelacanth was discovered for the first time off the east coast of Africa. Before this discovery, coelacanths were thought to have become extinct at the end of the Cretaceous, and this finding transformed our understanding of their evolutionary history. *Latimeria* retains many morphological features similar to those of ancient coelacanth fossils, including fleshy paired fins and distinctive body structures, and is therefore often referred to as a “living fossil.” It provides important insights into the evolution of lobe-finned fishes and morphological changes associated with the transition from fishes to tetrapods.