

News and Highlights

Distribution and Collection of China's Dinosaurs

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It is estimated that the world has discovered more than 1000 species and 800 genera of dinosaurs. Chinese scientists have named more than 170 species of dinosaurs, with 17 genera and 44 species of dinosaur egg fossils, 35 genera and 39 species of dinosaur footprints, since their first discovery in China in 1902. China has dinosaur occurrences from the Upper Triassic to the Upper Cretaceous, and has been recognized as being one of the most prolific dinosaur countries in the world. Till now, China has established six dinosaur professional museums and six national-level dinosaur protected localities. Here we will focus on the six dinosaur professional museums.

The Zhucheng dinosaur museum located in Zhucheng City in Shandong Province was established in May 2001 (Fig. 1). This area has discovered and unearthed many types of dinosaurs including *Hadrosaurus*, *Tyrannosaurus*, *Psittacosaurus* and *Protoceratops*, and has more than 20 key localities. This museum has collected the world's largest giant hadrosaur fossil skeleton and more than 100 specimens of dinosaur fossils. Among them, the fossil skeleton of *Shantungosaurus* is 9.1 m tall and 16.6 m long, which is currently the highest and tallest hadrosaur fossil in the world.

The Zigong dinosaur museum located in Zigong City, Sichuan Province was established in April 1984 (Fig. 2). It

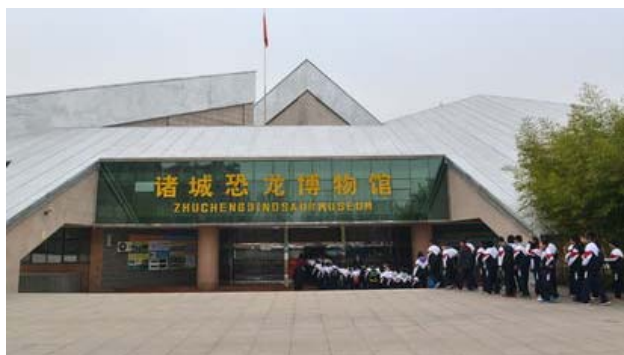


Fig. 1. The Zhucheng dinosaur museum in Shandong Province (<http://www.cnkonglong.com/main.html>).



Fig. 2. The Zigong dinosaur museum in Sichuan Province (<http://www.zdm.cn/>).

is one of the world's three largest dinosaur ruin museums, the other two being the Utah National Dinosaur Memorial Museum, USA, and the Alberta Provincial Dinosaur Park, Canada. Zigong museum has collected 5 classes, 11 orders, 16 families, 40 genera and species of more than 200 fishes, amphibians, reptiles and mammals. The types of dinosaurs include prosauropods, sauropods, theropods, ornithopods and stegosaurs, accounting for one-sixth of China's total dinosaur number, almost embracing all known dinosaur types before the Jurassic (205–135 Ma BP). The most valuable dinosaur fossils in the museum are the world's earliest Middle Jurassic *Stegosaurus* and the first discovered Pterosauria, which fill an evolutionary blank in the history of dinosaurs.

The Lufeng dinosaur museum in the Lufeng County of Chuxiong Yi Autonomous Prefecture, Yunnan Province was established in April 2008 (Fig. 3). Statistics show that Lufeng territory has yielded 100 dinosaurs of 24 genera and 34 species, including *Lukousaurus*, *Sinocoelurus*, *Sinosaurus triassicus*, *Lufengosaurus magnusi* and *Lufengosaurus* sp., *Yunnanosaurus huangi* Young, *Yunnanosaurus magnus*, *Jingshanosaurus xinwaensis*, *Anchisaurus sinensis*, *Diachongosaurus lufengensis* Young and *Scelidosaurus oehleri*. More than 60 highly complete dinosaur fossils are on exhibition in this museum, neatly arranged like the Terracotta Army.

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Fig. 3. The Lufeng dinosaur museum in Yunnan Province.



Fig. 4. The Erlian dinosaur museum in Inner Mongolia.



Fig. 5. The Xiao Hinggan Ling dinosaur museum in Yichun City, Heilongjiang Province.



Fig. 6. The Shenzhou dinosaur museum in Jiayin County, Heilongjiang Province.

Strangely, no dinosaur egg fossils have been discovered around Lufeng despite the thousands of dinosaur skeletons discovered. However, it is rare to find dinosaur footprints and skeletal remains in proximity. In addition, there are early primates in this museum—three *Ramapithecus* skull fossils, four *Sivapithecus* skull fossils, more than ten mandible and maxillary bones of anthropoids, and 1202 single teeth of anthropoids, which have been discovered in this area. This museum has collected till now the world's most complete *Ramapithecus* skull fossil named *R. lufengensis*.

The Erlian dinosaur museum at Erenhot in Inner Mongolia was established in 1989 (Fig. 4). This area ranks as the earliest with discovered dinosaur fossils in Asia, and is abundant with dinosaur fossil species. During six large-scale investigations and excavations in the last 100 years, more than ten species of *Euhelopus*, *Alectrosaurus olseni*, *Hadrosaurus*, *Ornithomimus*, *Ankylosaurus* and *Ceratops* were discovered, with a large number of preserved dinosaur bones and eggs found. Of these, the Cretaceous dinosaur fossils represent the latest biota representing global dinosaur activity. In 1988, the Erlian Basin–Chagannuoer natural protection area of dinosaur fossils was established here. Recently, Professor Dong Zhiming found fossils of a new of therizinosauroid dinosaur, which he named *Neimenggusaurus*.

The Xiao Hinggan Ling dinosaur museum in Yichun City, Heilongjiang Province was established in July 1998 (Fig. 5). A total of seven dinosaur skeletons from the Cretaceous and Jurassic periods are on exhibition. The largest dinosaur skeleton is a *Mamenchisaurus* skeleton unearthed in Chuan County, Sichuan Province that is 22 m long and 9 m tall; it contains 19 cervical vertebrae and has a tail length of 4 m, which is very eye-catching. Two flat-headed hadrosaur skeletons unearthed at Longgu Hill, Jiayin County in Yichun City are also on exhibition here.

Lastly, the Shenzhou dinosaur museum in Jiayin County, also Yichun City, Heilongjiang Province was established in 2004 (Fig. 6). In 1902, a complete dinosaur skeleton, 4.5 tall and 8 m long, was unearthed at Longgu Hill, and it was named *Mandschurosaurus amurensis*. This skeleton is now on exhibition in the St. Petersburg Geological Museum, Russia. The dinosaur fossils in this area belong to the flat-headed Hadrosauridae, typical of Late Cretaceous large hadrosaurs; they are a type of the last surviving dinosaurs around 65 Ma BP on Earth. In addition, skeletal fossils of the *Tyrannosaurus*, *Coelurus* and *Ankylosaurus*, and dinosaur skin and footprints were also found. This museum also contains a large number of fish, bird, turtle, lizard and crocodile fossils, and abundant angiosperm plant fossils.