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# The 9<sup>th</sup> International Conference on Fossil Insects, Arthropods and Amber: First Circular

Xi'an, China

18<sup>th</sup> April – 25<sup>th</sup> April, 2023 (tentative)

It is a great honor for us to undertake the 9<sup>th</sup> International Conference on Fossil Insects, Arthropods and Amber (FossilsX3 Conference) originally planned to be held in Xi'an, China in 2022 at the 8<sup>th</sup> FossilsX3 Conference in Dominican Republic in 2019. As the current COVID-19 pandemic has brought many uncertainties to international travel and activities, after consultation with the International Palaeontological Society (IPS), the meeting will be postponed for one year in Xi'an in 2023.

In the past year and a half, we have conducted two inspections on the venue and field routes of the conference. We originally planned to schedule the conference in mid-to-late April, 2022. However, due to the impact of the COVID-19 pandemic, these investigations have not yet been able to determine the final venue and accommodating during the field trip, and we cannot estimate the specific costs for the time being. As promised at the Dominican Republic conference, we will provide economical conference fees and mid-conference field trip fees, as well as reasonable pre-conference field trip fees. Payments can be made at the meeting.

## About Xi'an

Xi'an is the capital of Shaanxi Province with a population of more than 10 million person. It is located in the middle of the Guanzhong Basin, bordered by the Weihe River in the north, and adjacent to the Qinling Mountains in the south. It was designated by UNESCO as a world historical city in 1981 and is an important birthplace of Chinese civilization and the Chinese nation. Xi'an was also the starting point of the Silk Road. In China's history, more than a dozen dynasties established their capitals here, which lasted for thousands of years, including the Zhou Dynasty (BC 1066–BC 771), Qin Dynasty (BC 221–BC 206), Han Dynasty (BC 200–9), and Tang Dynasty (618–904). Xi'an has a long history and rich culture: *Homo erectus lantianensis* was discovered (about 700,000 to 1.15 million years) from adjacent regions; remains of a primitive city appeared 6000–7000 years ago; and about 3000 years ago, Xi'an became the capital of the Western Zhou Dynasty and developed into China's culture, Economic and religious center. The Qinling ridge in the south of Xi'an, 2000–2800 m above sea level, is the boundary between the south and the north of China. At 3867 m above sea level, Taibai Mountain is the highest peak in central China. The Xi'an City Wall was built in the Ming Dynasty and has a history of more than 600 years. It is the most spectacular intact ancient city wall in China. Xi'an people like to eat all kinds of wheaten food, and there is a famous Muslim snack street.

## Schedule (tentative): 18<sup>th</sup>–25<sup>th</sup> April, 2023

18<sup>th</sup> – 20<sup>th</sup>: 3-day pre-conference field trip (tentatively limited to 50 people)

20<sup>th</sup>: Registration and Welcome Reception

21<sup>st</sup>: Opening, Day 1 of lectures and Dinner

22<sup>nd</sup>: Day 2 of lectures

23<sup>rd</sup>: Mid-conference field trip

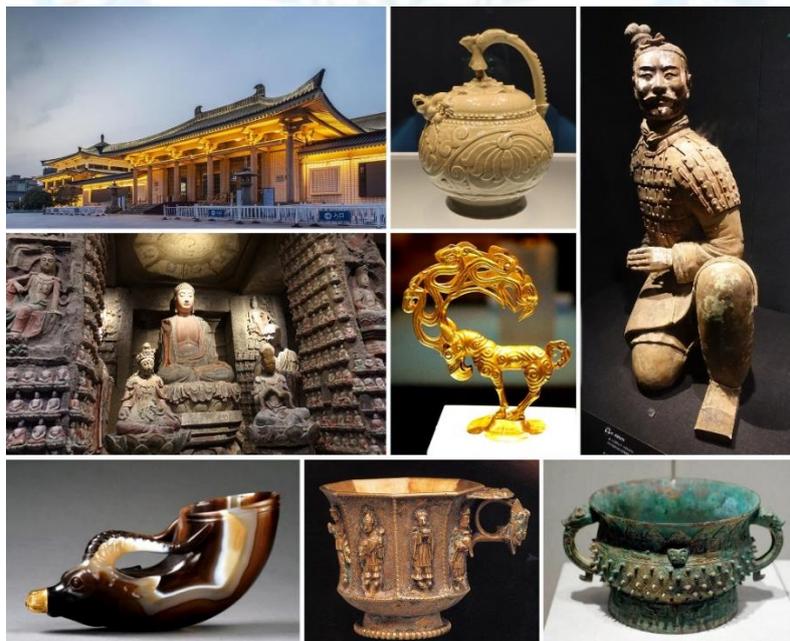
24<sup>th</sup>: Day 3 of lectures

25<sup>th</sup>: Closing of the meeting



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1. Datang Evernight City; 2. Dayan Pagoda and fountain; 3. Xi'an Bell Tower; 4. Xi'an City Wall; 5. Datang Furong Garden; 6. Muslim Snack Street; 7. Shaanxi History Museum; 8. Beilin Museum; 9. Banpo cultural relics; 10. Shadow Puppets; 11. Local meat sandwiches; 12. Steamed dumplings.



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1. Shaanxi History Museum; 2-8. Cultural relics on display in the museum.

**Conference venue and hotel:** It is located near Datang Everbright City in Yanta District in the south of Xi'an. There are numerous hotels nearby, ranging from 2 stars to 5 stars, and the price is estimated to be between 40–150 US dollars per night (one room for one or two beds).

**Conference presentation and publication:** The conference presentation will be divided into Invited Talk, Keynote Talk, Standard Talk, and posters. In addition to the abstract book, 1–2 special issue(s) will be published in *Palaeoentomology*. *Palaeoentomology* is the official publication of the IPS, published bimonthly by New Zealand's Magnolia Press. The articles are divided into four categories: Review, Article, Short Communication and Comment. Since its launch in the end of 2018, a total of 13 issues have been published.



## Field Trips:

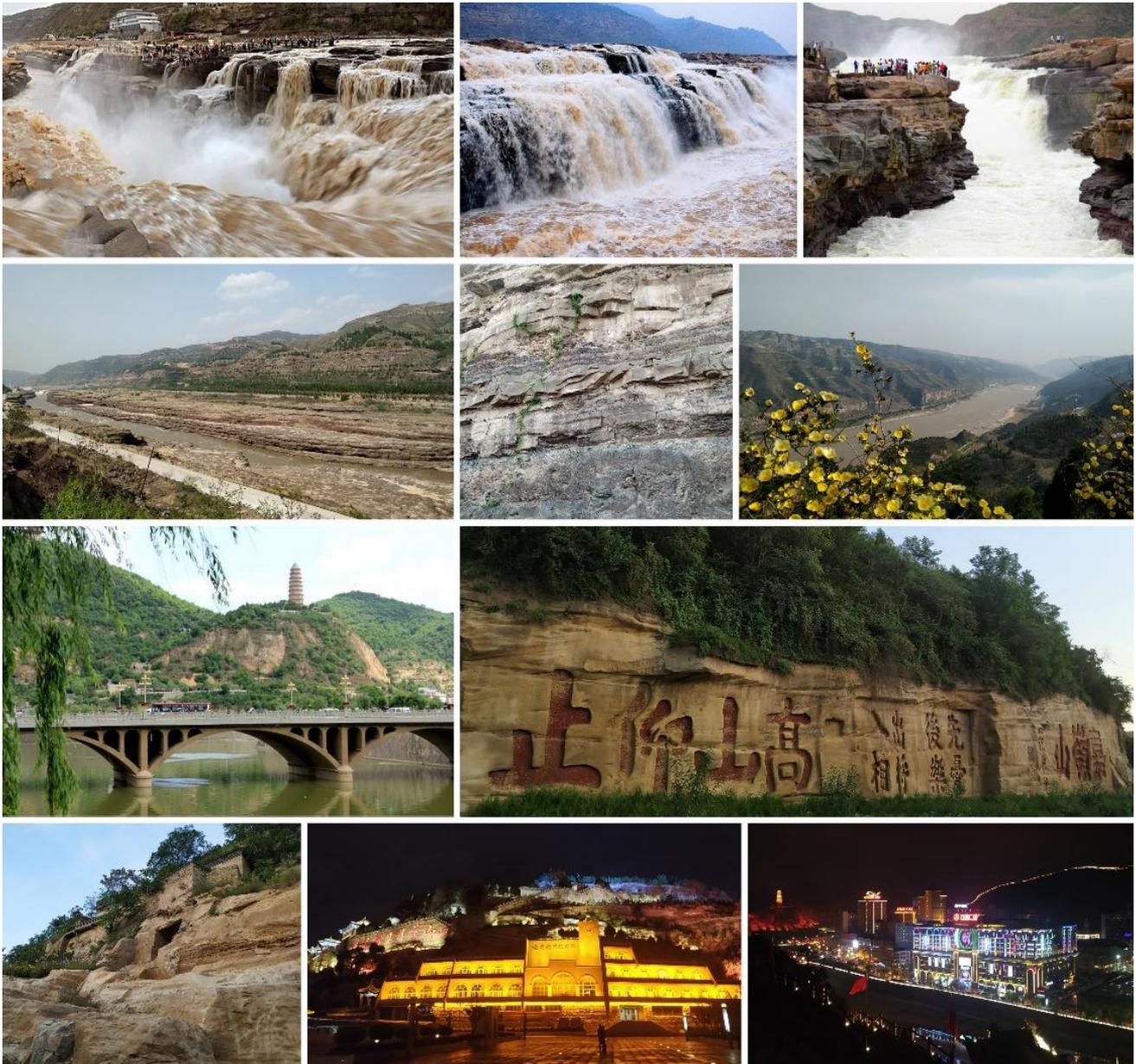
The field trips will cover the Mesozoic stratigraphy and palaeontology of the Ordos Basin and the Loess Plateau. The towering Qinling Mountains developed in the southern part of Xi'an. This investigation has entered the Loess Plateau from the Guanzhong Basin, where Xi'an is located, to the Tongchuan area, and the northernmost city of Yulin is a desert area. The purpose of the investigation is to understand the Mesozoic strata, palaeontology, palaeoclimate and tectonic movements in the Ordos Basin. From the dry hot environment of the Red Bed in the mid-Triassic, it experienced a large cycle of warm and humid environment and then to the dry climate of the Early Cretaceous. Specifically, the middle and lower parts of the Middle Triassic Zhifang Formation are red beds, and coal lines begin to appear in the upper part of the formation; the overlying Middle-Upper Triassic Yanchang Formation has extensive oil and gas resources, and the lower strata are called by some authors the Tongchuan Formation and yielded a large number of insect fossils. At the turn of the Triassic and Jurassic, the area was elevated and lacked sedimentation. The Fuxian Formation of coal-bearing strata developed in the Early Jurassic. In the Middle Jurassic, the Yan'an Formation was a set of coal-bearing strata, which developed the largest coal mine in China. The upper Jurassic Zhiluo Formation is a glutenite deposit with a purple-red upper part, marking the beginning of a new drought cycle. The unconformity between the Zhiluo Formation and the conglomerate at the bottom of the Lower Cretaceous Yijun Formation indicates the Yanshan Movement-Phase B.

The Yanshan Movement-Phase A is not evident in the Ordos Basin, but is obvious at the edge of the basin, which is equivalent to the interface between the Yan'an Formation and the underlying Fuxian Formation. Yanshan Movement-Phase B developed in this area, and the terrain was elevated in the Tongchuan area. The Zhiluo Formation and the Yijun Formation were in direct contact, and the Upper Jurassic-Lower Cretaceous Anding Formation and the Lower Cretaceous Fenfanghe Formation between the former two were invisible. The middle and lower parts of the Zhiluo Formation are variegated clastic rocks, and the upper part is a red rock layer, which represents the beginning of a regional arid climate. The Jurassic-Cretaceous boundary in the Ordos Basin is located in the upper part of the Anding Formation.

## Pre-conference field trip:

**Day 1:** Depart from Xi'an, visit Hukou Waterfall National Geological Park, investigate the Middle Triassic Zhifang Formation; arrive in Yan'an in the afternoon and inspect Baotashan Member of the Yan'an Formation at the type locality. Overnight in Yan'an City.

Yan'an is the holy land of the Chinese nation and the Chinese revolution.



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1–3. Hukou Falls; 4. Landforms after the Yellow River passes Hukou Falls; 5. Middle Triassic Zhifang Formation; 6. Yellow River, the upper reaches of Hukou Falls; 7. Baota Mountain, based on which the Baotashan Member of the Yanan Formation was named; 8. Ancient stone carvings on the thick sandstone of Yan'an Formation, with inclined bedding visible on it; 9. Baotashan sandstone; 10. Qingliangshan Revolutionary Site; 11. Overlooking the night view of Yan'an from Qingliang Mountain.

**Day 2:** Visit the Zaoyuan Revolutionary Site in Yan'an, and inspect the insect fossil producing area in the Zaoyuan Member of the Yan'an Formation; arrive in Yulin in noon, inspect the insect fossil site of the Yan'an Formation in Huangjiagou in the afternoon, and visit the Shimao site. Overnight in Yulin.

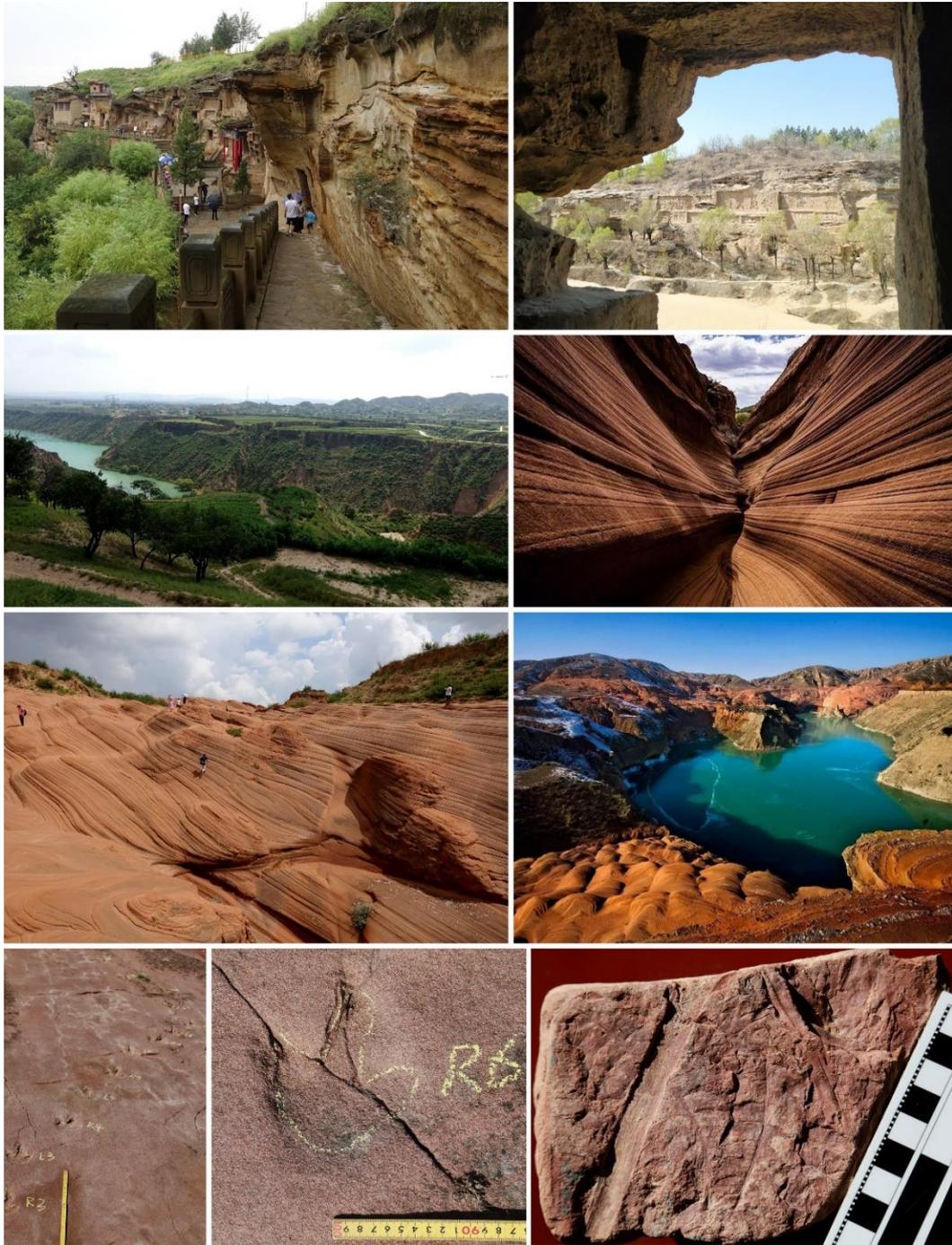


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1, 2. Yan'an Zaoyuan; 3. Middle Jurassic Yan'an Formation Zaoyuan Member; 4. Collecting insect fossils; 5. Professor Lin Qibin's early collection of Mecoptera from the Zaoyuan Member; 6. Yan'an Formation strata around Huangjiagou Village, containing numerous plant fossils, insect fossils (Odonata, Blattoda, Orthoptera, Coleoptera), bivalves, fish etc.; 7. Cave-house at Huangjiagou Village; 8. Plant fossils; 9–11. Shimao ancient city and its unearthed cultural relics. The Shimao site is a relic from the late Neolithic period to the early Xia Dynasty, with a history of more than 4000 years, covering an area of about 4.25 million square meters; 12. Yulin City night view.

Yulin is located in northern Shaanxi, at the junction of the Loess Plateau and the Mu Us Desert. Yulin has China's largest coal field and China's largest natural gas field, and is rich in oil (proved reserves of 360 million tons) and rock salt (reserves more than a quarter of the country). Yulin is a national historical and cultural city. The ancient city of Yulin has a history of more than 500 years.

**Day 3:** Visit Red Stone Gorge and leave Yulin City; visit Longzhou Danxia Geological Park in Jingbian County and arrive in Xi'an in the evening. The farthest point of the journey is in northern Shaanxi, about 600 kilometers from Xi'an.



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1, 2. Yulin Red Stone Gorge, ancient stone carvings on the sandstone of the Yan'an Formation, there are many nearly circular dimples on the cliffs, which are considered by some scholars to be salt weathering; 3. The relics of the Great Wall in Ming Dynasty - Longzhou Fort, are one of the many Great Wall sites of various eras along the way; 4-6. Longzhou Danxia Provincial Geopark, known as China's "Wave Valley"; 7, 8. Theropod dinosaur footprints from the Longzhou Danxia (Lower Cretaceous Luohe Formation) landform; 9. Plant fossils from Longzhou Danxia. (Figs 7-9 courtesy of Dr. Lida Xing)

**Mid-conference field trip (unlimited number of participants):**

Visit the contact boundary between the Zhifang Formation and the Yanchang Formation; the Yanchang Formation strata; inspect the lower part of the Yanchang Formation (that is, the Tongchuan Formation) insect-bearing fossil layers in Hejiafang Village; inspect the contact surface of the Zhiluo Formation and the Yijun Formation in the Yuhuangong Relic Park, that is, the Yanshan Movement-B Phase.



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1, 2. The terraces of Tongchuan; 3, Contact area between the Yanchang Formation and the Zhifang Formation; 4, Collecting fossils from the section where Professor Youchong Hong (5<sup>th</sup> November, 1929 – 4<sup>th</sup> July, 2019) once worked in Hejiafang Village; 5. “Tongchuan Formation” fossil profile; 6. An insects fossil from the “Tongchuan Formation”, *Sinoglosselytron qishuiheensis* Hong, 2007; 7. Insect fossil, *Granulus* sp.; 8. Professor Hong collected insect fossils in Tongchuan at the beginning of this century; 9. Hongyouchong Quarry; 10. Fish fossil in the Oil Shale.

There are many oil fields in northern Shaanxi Province since ancient times, and the oil is produced in the sandstone of the Triassic Yanchang Formation. Oil extraction originated at least in the Northern Song Dynasty and has a history of more than a thousand years. During the Beiyang Governance, M. L. Fuller and F. G. Clapp of Exxon Mobil Corporation carried out geological surveys in Yan'an, Yanchang, Yongping, Ganquan, Yijun and other places, and established Yanchang Formation in 1927. In 1980, the Institute of Geology of the Academy of Geological Sciences divided the lower part of the Yanchang Formation into the Tongchuan Formation, which is well exposed from Jinsuoguan to Hejiafang, containing a large number of paleontological fossils. The "Tongchuan Formation" in the Hejiafang area contains a large number of fossils, including insects, clam shrimps, tadpole shrimp, ostracods, bivalves, fish, plants, and spores and pollen.



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1. Yuhua Palace Site Memorial. Yuhua Palace was one of the three imperial summer palaces in the Tang Dynasty; 2. The collapsed conglomerate at the bottom of the Lower Cretaceous Yijun Formation; 3. Zhuluan Cliff is an arc-shaped cliff. It is about 200 meters wide, 65 meters high, and the waterfall is 40 meters high. This place shows the contact surface between the conglomerate at the bottom of the Yijun Formation and the red sandstone at the upper part of the Zhiluo Formation. This interface represents the Yanshan Movement-Phase B. Prior to this, due to the westward compression of the Paleo-Pacific Plate, the terrain was elevated; subsequent crustal denudation developed a thick layer of complex conglomerate at the bottom of the Yijun Formation; 4. A total of 26 small grottoes have been built near the contact surface since the Song Dynasty; 5. The boundary between the Yijun and Zhiluo formations, showing complex conglomerates; 6. The boundary between the Yijun and Zhiluo formations in the Suchengyuan site.

## Tourism activities

**Note:** Tourism activities not covered by the conference. There are numerous scenic and historical sites in Xi'an and adjacent regions. Local professional travel agencies may provide tourism service (which is not part of the conference).

**April 25<sup>th</sup>, afternoon:** Terra-Cotta Warriors and Mausoleum of Qin Shihuang.

The Mausoleum of the First Emperor Qin and the Terracotta Warriors and Horses Pit were approved by UNESCO for inclusion in the “World Heritage List” in 1987. This is the tomb and funeral of the first emperor of China, with a history of more than 2,000 years.



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1, Qin Shihuang; 2, 3. Terra-Cotta Warriors Museum; 4. Qin Shihuang Mausoleum; 5. Bronze carts and horses; 6–12, Terracotta Warriors and Horses.

**April 26<sup>th</sup>:** Zhouzhi Golden Monkey Nature Reserve and Louguantai.

Zhouzhi Golden Monkey National Nature Reserve is located in the depths of the Qinling Mountains. There are more than 1,000 golden monkeys. In addition, there are rare wild animals such as giant pandas and clouded leopards, but it is actually difficult to see wild animals in the wild. The destination of this trip is the Golden Monkey Observatory of Northwest University, where you can generally see the Golden Monkey (it is not rain). The second stop of this trip is currently uncertain. The destinations may include Louguantai, a sacred place of Taoism, Louguantai National Forest Park, or Louguantai Panda Breeding Base. We prefer the latter, but due to the COVID-19 epidemic, the Breeding Base that was originally planned to be opened at the end of 2020 has never been opened to visitors.



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1, 2. Qinling Mountain; 3–5. Golden monkey; 6. Panda; 7. Brown panda; 8. Clouded leopard; 9–11. Louguantai, Taoist holy places.

**April 27<sup>th</sup>:** Huashan National Geological Park.

A large number of extensional basins appeared after the Yanshan Movement-Phase B, accompanied by violent magmatism. Huashan originated from this period and is a granite body with an intrusion age of about 1.21 Ma. At the end of the Yanshan Movement, the earth's crust was uplifted about 70 million years ago, and after long-term denudation, weathering and geological tectonic movement, the current Huashan Mountain was formed. Huashan Mountain is famous for its dangers, with the highest South Peak at 2154.9 meters above sea level. Huashan has 204 species of vertebrates and more than 1,500 species of insects.



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1. Overlooking Huashan Mountain; 2. Heart-connecting Locks everywhere; 3. Sky Ladder; 4. Chess Pavilion; 5. West Peak; 6. Cloud Sea by the East Peak; 7. Sky Plank Road.

**Note:** The above information may be subject to change later on. We are currently building a website for this conference (<http://9th-fossils3-2023.csp.escience.cn/dct/page/1>), and further news will be updated on the website. The second round of circular of the conference is expected to be distributed in the middle of 2022. Regarding the delay of the conference and the uncertainty of much needed information, we feel deeply sorry. Thank you for your support and understanding.



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