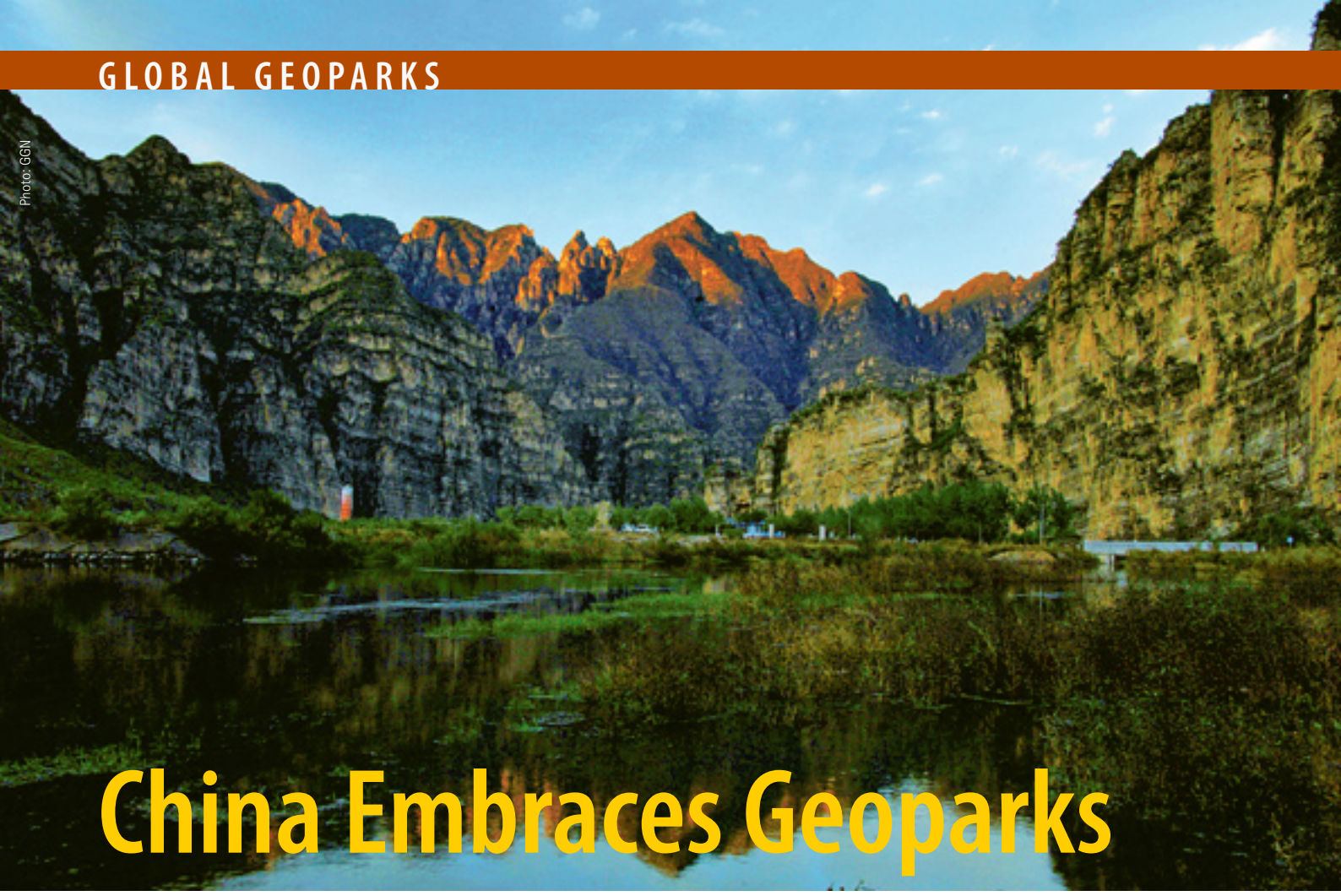

China Embraces Geoparks

The Fangshan Global Geopark is only an hour from downtown Beijing, but a world apart featuring beautiful scenery, colorful caverns, and world class fossil localities.

To safeguard their geological heritage, China has established a network of National Geoparks; important geological sites that provide essential information for understanding the Earth's processes and evolution.

Editor's note: On my recent trip to China, I was fortunate to visit two of China's Geoparks, both located near Beijing. Even though only a short time was devoted to visit, the Fangshan and Mt. Tai Global Geoparks, were among the highlights of the trip. Fangshan is featured in this article.

Thomas Smith, Associate Editor

Beijing, China, will be the focal point for millions around the world this summer as they will showcase the area for the XXIX Olympic Games. Outside the Olympic venues, Beijing offers many famous sights such as the Summer Palace, Tiananmen Square, Temple of Heaven, the Forbidden City, and the Great Wall.

For the geotourist, an array of stunning karst landforms and caverns, a fold and thrust belt that has helped unravel regional geologic concepts, and two of the most important fossil localities in the world are there to be explored within an easy day trip from the city.

Early Life

Fossil evidence indicates that a half million years ago early Man lived in what are now the suburbs southwest of downtown Beijing. This locality, and a large surrounding area (954 km²), is now protected in the Fangshan Global Geopark.

The Fangshan area offers two unique insights into biological evolution. First is a look at some of the earliest life forms on Earth.

Nearly a complete record of the beginning of biologic evolution between 1.8 billion to 800 million years ago is preserved in these rocks. The oldest paleontological fossils found here belong to single celled algae that lived on a tidal flat in a shallow sea in the Precambrian.

From this starting point, evolution of these early life forms can be traced to larger

The algae that grew on tidal flats of the ancient seas that once covered northern China gradually became more complex and formed well preserved columnar stromatolites at Fangshan Geopark.

Photo: Tom Smith

Geoparks have been established to promote geotourism as well as protect important cultural and geologic areas.

Global Geopark System

An effort to conserve a wealth of geological heritage sites in China was formally approved in 2000, establishing 44 National Geoparks scattered across the entire country. The parks were originally proposed by Chinese geologists in 1985. Since then, China has collaborated with UNESCO's Division of Earth Sciences and the International Union of Geological Sciences (IUGS) to promote geoparks worldwide.

In June, 2001 the Executive Board of the UNESCO decided to support member countries' suggestions to establish regional parks with unique geological characteristics. The Board also made a resolution to promote the construction of a global network of geological heritages with special significance. In October, 2003 UNESCO established an office of Global Geopark Network (GGN) in Beijing, China.

The First International Conference on Global Geoparks was held in Beijing in 2004. Since the launching of the Network, there are now 55 Global Geoparks in 17 Member States. China leads the world with 20 established Global Geoparks. Local areas prosper from the social, economic, and environmental benefits these sites offer.

The Beijing office has a Global Geoparks communication center and helps to coordinate and promote the development of geoparks in the Asian and Pacific regions. They also publish GGN newsletters and maintain the Global Geopark website and its homepages. Geopark information from all over the world can be found at www.globalgeopark.org


Photo: Peking Man Site Museum

A few of the skull-caps unearthed from Peking Man Site.

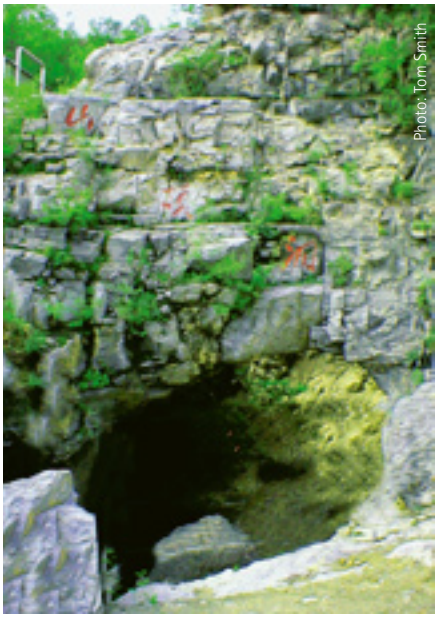
Photo: Tom Smith

The upper cave is the youngest geologic site at Zhoukoudian. Late Homo sapiens fossils were collected dating back 11,000 to 34,000 years.

and more complicated forms. Finally, representing the higher evolutionary stages, are macro-algae fossils that were actually multi-celled and becoming more complicated in pattern.

The appearance of these multi-celled complex forms was a *significant event in biological evolution* indicating a rise in oxygen levels in the oceans and atmosphere to about 1% of today's levels.

The Peking Man

Yet, possibly the most important and famous fossil site here is much younger. Only 40 km southwest of downtown Beijing, the world was astonished by the 1929 discovery of the first skull of Homo erectus pekinensis, or the Peking Man. It was found by Mr. Pei

Karsted Landscapes-Strategic Mountains

To the north of the Peking Man Site at Zhoukoudian are spectacular karsted mountains and valleys, including some of the most beautiful caverns in the world. Outcrops reveal a 2.8 billion-year geologic history of northern China. These mountains provide key information on early plate movements and formation of geologic features across Asia. They also form a strategic barrier between the fertile North China plain, where Beijing is situated, and the hostile lands to the north where the Great Wall was constructed to enhance this mountain barrier.


Photo: Tom Smith

An amazing architectural feat, the Great Wall snakes its way across China's landscape like a "giant dragon". Construction began 2,000 years ago and is estimated to be 6,400 km long.

The caverns of Fangshan Geopark are some of the most unique in the world. Walking through the narrow passageways and viewing the cave formations is a must while visiting the area.

Wezhong, a famous Chinese Paleolithic archaeologist at what is now known as Locality 1 at Zhoukoudian.

Since that find, over 100,000 stone artifacts have been recovered revealing evidence of Peking Man's use of fire, along with abundant animal and hominid fossils. This includes six nearly complete skulls yielding the most comprehensive and systematic information for reconstructing the life of early humankind.

A historical record of over 700,000 years of Man's activities was found at this site. Three stages of human evolution can be reconstructed from the hominid materials that have been unearthed: *Homo erectus,* archaic *Homo sapiens*, and *late Homo sapiens*. The materials found here help support major anthropological theories and yield ethnic comparisons between the East and the West.

A tour starts at the onsite museum and takes you through the history of discovery, along with many of the fossils and artifacts found at this locality. From the museum, there are pathways to take you around "Dragon-bone Hill". Past Locality 1, also known as the Peking Man Site, is the most important site at Zhoukoudian. Discovered in 1921 and excavated from 1927 to 1937, a total of 17 layers were exposed with the first Peking Man skull found in a 2m thick limestone breccia.

A Major Facelift

The Fangshan Global Geopark is now undergoing a major facelift to attract more visitors and should be completed in 2008, in time for the Summer Olympics. Improvements include more efficient traffic patterns, a geological museum, and upgraded tourist facilities. The park is even linked to Beijing by the city's subway network. Once there, buses, electric cars and bikes can provide transportation.

So, do not miss this fascinating and educational geologic attraction, if you're close by.

The first Peking Man's skull was discovered at Location 1, on level 11, about 2 m below level 7 pictured near the center of the photo.