

SOME ARCHEOLOGICAL SITES FROM THE EARLY PLEISTOCENE IN CHINA

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ABSTRACT

A large number of archaeological sites dating to the Early Pleistocene have been discovered in the Nihewan Basin in northern China. Based on the premise that the earliest hominids in China migrated from the south to the north, it is suggested that the oldest sites are to be found in southern China.

THE EARLIEST SITES IN CENTRAL AND SOUTHERN CHINA

A large number of fossil hominoid materials from Miocene and Early Pliocene deposits, thought to represent the species *Lufengpithecus lufengensis* and *Platodontopithecus jianghuaiensis*, have been discovered in southern China. This suggests that Eastern Asia, especially southern China and Southeast Asia, is an important region for the study of hominid evolution. Although there still is very little evidence of hominoid and hominid fossils dating from the Early Pliocene to the Early Pleistocene in China, that is, about 4-2 mya there has been an increase in recent years in the number of archaeological sites in southern China which are considered to date to the Early Pleistocene.

The Shangnabang site in Yuanmou County, Yunnan Province, has yielded three small stone artefacts and two incisors of *Homo erectus* in association with many mammalian fossils representing a total of 28 species. Renewed palaeomagnetic and stratigraphic studies now suggest that Shangnabang dates to between 1.78-1.96 mya (Qian *et al.* 1991). At Xihoudu in Ruicheng County, Shanxi Province, an Early Pleistocene age is indicated for the 21 mammalian fossil species discovered with 32 stone artefacts. Most of the archaeological materials from Xihoudu were found *in situ* in the sand-gravel layers with stone artefacts, usually strongly water-worn (Chia and Wang 1978). However, a number of

specimens classified as stone artefacts possibly represent naturally modified pieces of stone, although a recent study of 14 of the specimens has concluded that these are artefacts (Wei 2000).

The large number of mammalian fossils, including 116 species, recovered from the Longgupo site in Wushan County, Chongqing City in southwestern China, suggest an Early Pleistocene antiquity. This locality has also produced a single upper incisor, a fragment of a hominid mandible with P4 - M1, and two stone artefacts (Huang *et al.* 1991). Some scientists believe, however, that the incisor falls into the category of late *Homo sapiens* and that the mandible derives from an ape (Culotta 1995; Wang 1996; Wolpoff 1996).

THE NIHEWAN BASIN SITES

A large number of important archaeological sites from the Early Pleistocene in China are known from the Nihewan Basin in northern China (Figures 1 and 2). The basin is located in the valley of the Sanggan River, about 120 km west of Beijing, and has an area of about 9,000 km². This extensive area with its thick fluvio-lacustrine sediments has yielded abundant mammalian fossils from the Late Pliocene through to the Late Pleistocene (Wei 1991). Geological studies of the sediments have shown that the Nihewan Basin experienced a number of changes beginning with the expansion of the ancient lake, followed by lake shrinkage, gorge cutting and erosion with alluvial and aeolian deposition comparable to that of Olduvai Gorge in Africa (Wei 1997a). The basin is thus dubbed the "Olduvai Gorge of East Asia" (Wei 1997b).

The pioneering endeavours of French workers contributed greatly to the scientific study of the Nihewan Basin. Among these, Teilhard de Chardin and his associates predicted that humans had occupied the Nihewan in the Early Pleistocene, and hoped to find evidence to demonstrate human presence as early as the times of *Hipparion* sp. (the three-toed ancestor of the horse) (Teilhard and Piveteau

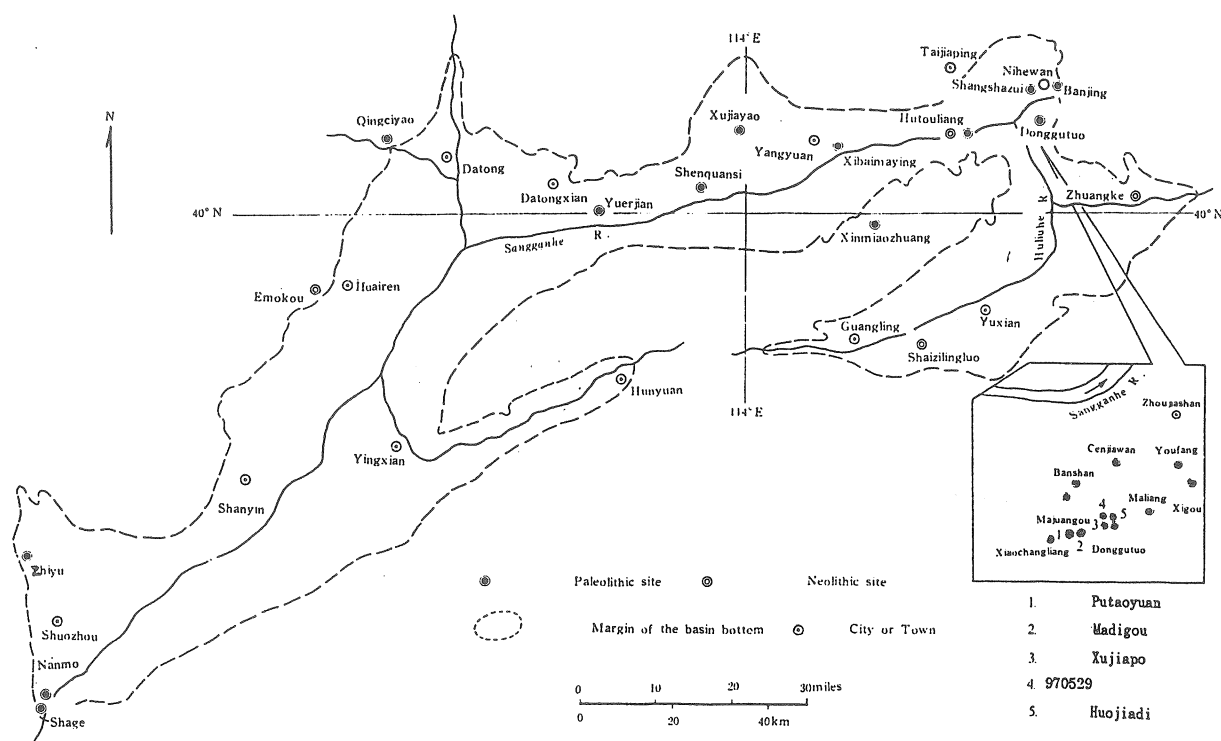


Figure 1: Approximate location of the Palaeolithic sites in the Nihewan Basin in China.

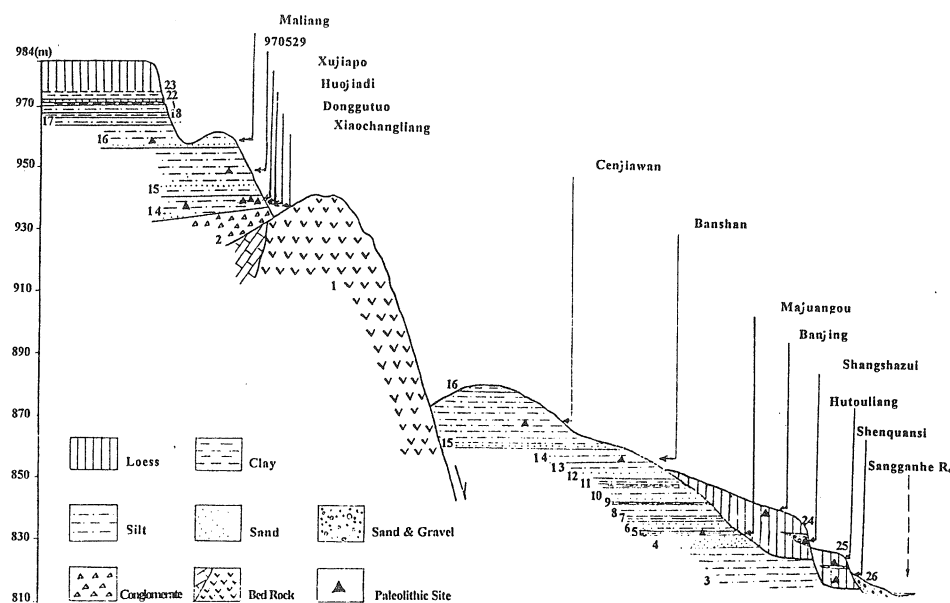


Figure 2: Synthetic archaeological geologic section in the Nihewan Basin in China.

1930). Although Breuil (1935) thought that a crude biface-like specimen found at Xiashagou represented an artefact, Teilhard de Chardin (1935) doubted Breuil's interpretation because of the difficulty of excluding non-human agencies.

Since 1972, a series of Palaeolithic archaeological sites dating from the Early to the Late Pleistocene have been found in the Nihewan Basin (Figures 1-3) (Wei 1997a; Figure 3). In particular, the Early Pleistocene sites discovered in the eastern part of the basin have stirred much attention at home and abroad. These sites are listed in Figure 3 with their respective ages, as follows:

WEI QI: EARLY CHINESE PLEISTOCENE ARCHAEOLOGICAL SITES

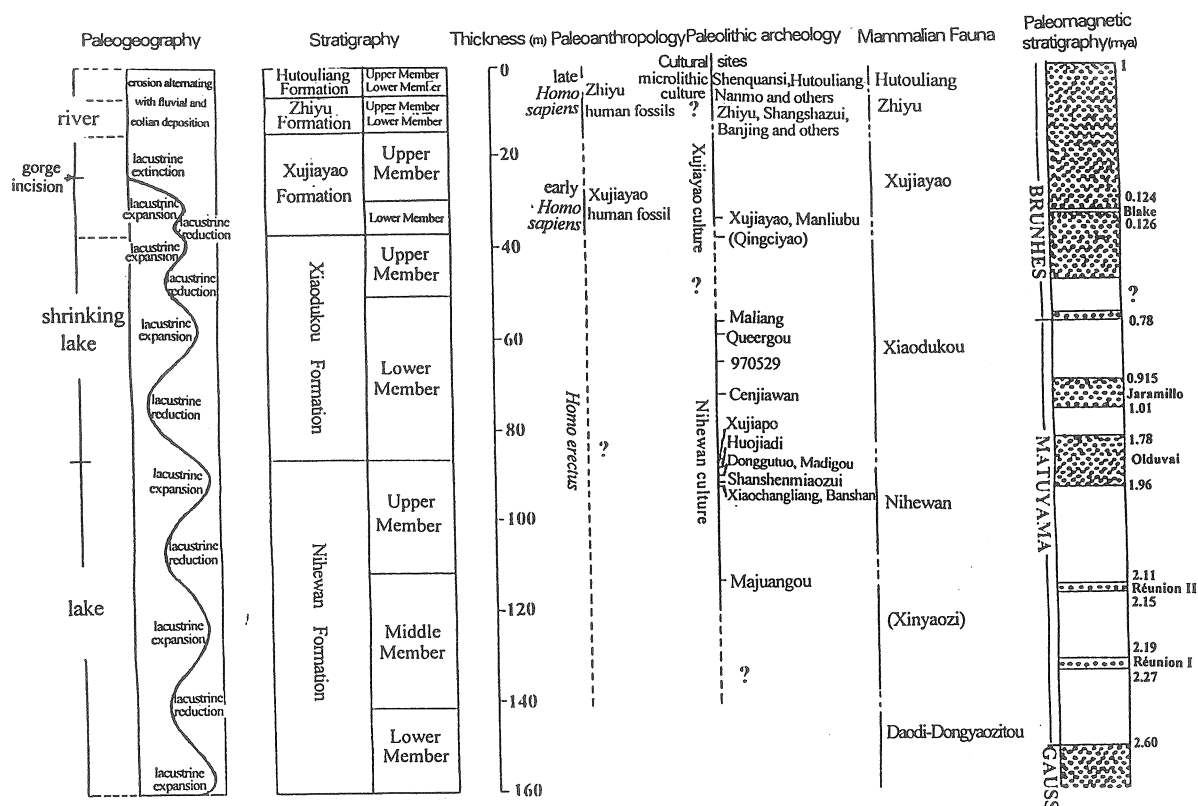


Figure 3: Framework of archaeological geology of the Nihewan Basin in China.

Xujiapo	0.915-1.01 mya
Huojiadi	close to 1.01 mya
Donggutuo A*; Madigou A*; Feiliang	>1.01 mya
Donggutuo B-E*; Madigou B* and C*; Shanshen-miaozui; Xiaochangliang; Banshan;	
Putao yuan	c. 1.1-1.2 mya
Majuangou	c. 1.4-1.5 mya
* layer	

The Donggutuo site was discovered near Donggutuo village some 4 km to the south of Nihewan village (Wei 1985, 1988; Jia and Wei 1987). The cultural occurrences are distributed within an area of about 40,000 m² and the sediments containing the cultural horizons are more than 3 m thick, consisting of five layers. These layers lie 1.8 m below the Jaramillo Subchron and about 50 m below the top of the section. The Donggutuo stone artefact collection includes cores, unmodified flakes, flake fragments and chunks, which together total over 80% of all artefacts. Implements comprise modified, utilized and retouched pieces, and a few other

specimens (Schick *et al.* 1991). Most of the artefacts are small with a length range of 20-50 mm. They have a breadth/length index of >61.8 and a thickness/breadth index of <61.8. The retouched pieces were almost all made on flakes by hard-hammer percussion from the ventral to the dorsal side and mainly consist of scrapers and points (Wei 1997a). A few of the retouched pieces may be called small bifaces.

The Xiaochangliang site is located approximately 1 km southwest of Donggutuo. Here the cultural horizon is only 0.5-0.8 m thick and lies about 10 m below the Donggutuo cultural deposit. The artefacts from this site are similar to those from Donggutuo, although there are far fewer modified and retouched pieces in this less numerous assemblage. Banshan is a site situated 1350 m northwest of Donggutuo, and is located in a fault zone (Wei 1994). Although Banshan is stratigraphically about 60 m below Xiaochangliang, consideration of the fault zone morphology suggests that the deposits of both sites should be approximately contemporaneous. The Majuangou site is located near Banshan and also lies in the same fault zone more than 20 m below Banshan. This is the oldest known archaeological site in the Nihewan Basin. Based on its stratigraphic position, Majuangou is estimated to date to 1.4-1.5 mya.

Of the other sites, Feiliang is located 200 m west of Donggutuo and has an archaeological horizon which correlates with layer A of Donggutuo. Madigou is only 300 m southwest of Donggutuo, and its three cultural layers, A, B and C, appear to correspond to Donggutuo layers A, B and D-E, respectively. The Xujiapo site is in the Jaramillo Subchron and is situated stratigraphically above Donggutuo, while the Huojiadi site, near Donggutuo, lies below the Jaramillo. Putaoyuan is located between Donggutuo and Xiaochangliang. The cultural layer of this site is possibly an extension of the cultural horizon of Xiaochangliang, on the basis of similar sedimentary facies.

Since 1990, American and English scientists have been excavating a number of Early Pleistocene archaeological sites in the Nihewan Basin. The results of these preliminary investigations suggest that all the stone artefact assemblages from the various sites seem to be very similar in technology, size and form. Accordingly they should be given a new scientific name, the Nihewan Culture (Wei 1997a).

CONCLUSION

A number of Early Pleistocene archaeological sites in the Nihewan Basin show that hominid activity in northern China is older than 1 million years. It is therefore expected that hominid fossils of equivalent age will be discovered in the future in this region. However, the discovery both of hominoids and of earlier evidence of hominids and their cultural activities in southern China suggests that early humans must have entered southern China before moving north.

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