

# 泥河湾盆地旧石器中晚期 石制品原料初步分析

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摘要: 本文通过对泥河湾盆地旧石器时代中晚期诸遗址中石料产地的调查和石制品颜色、质地及表面状况的分析后认为: 泥河湾盆地旧石器中晚期人类选择石料方式变化主要发生在旧石器晚期的早段和晚段之间, 在此之前的旧石器时代中期, 人类选择石料主要在遗址附近, 各遗址的石料表现出强烈的地方色彩, 但遗址中的一些优质石料可能来源于 10 多公里之外的地区; 而在旧石器晚期早段, 在基本继承这一特点的前提下, 仅有很少量的石料输送距离达数 10km; 石料被带到遗址之前一般并不进行粗选, 多是直接进行打片。在此之后, 人类对石料的选择则表现出刻意的追求, 优质石料大量被输送到数 10 公里之外, 而且石料在输入到遗址之前一般要经过精心选择, 与前一阶段形成鲜明对照。

关键词: 石料; 泥河湾; 旧石器中晚期

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## 1 引 言

近 20 年来, 在国际古人类学与考古学研究中, 对石料他患 缡



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尼河湾... 距离... 分布...

但... 类似... 90块断... 砾石进... 基岩山地... 靠近板井子... 花岗岩和白

选择石料的地点... 分布看, 应... 遗址之前, 砾石... 和风化面的断

看, 石料和板井子的... 质岩, 石制品... 不同。在 17 件大... 6×8.4(cm)的石... 锤打击后很容易... 楔形石核, 青色隐晶... 好地剥取石叶, 比板... 层中直接采集优质石... 来看, 和虎头梁文化... 坊居民可能在... 距离输入石料。

马房遗址的... 料全部... 黄绿色... 同上述两个遗址一... 很难见到带有砾石皮的... 带距离马房的直... 2... 盆地... 地区... 包括雀儿沟... 沟、虎头梁文化遗址群... 五庙庄遗址... 种类比较丰... 来看...

料... 使用, 但... 件... 火山岩 18... 硅质灰岩各... 很难说... 察后... 址中含... 高, 但从遗址中石料的多样性来看... 的苛刻, 应该是就地... 料... 灰岩、硅质灰岩、石英砂岩、



新庙庄附近基岩 状  
 在遗址附近侏罗系 中  
 也有分布。玛 用量甚  
 距离可能达 之,新庙庄

的观察 虎头梁文化中  
 庙庄人不刻意

以,石料主要  
 这种石料在输送

一种,所  
 佳质泥岩、砂质灰  
 地南部上侏罗

的程序,首先  
 砾石  
 行进

均  
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o site (%)

灰岩

神泉寺遗址 石料主要分两大类,一类是石英,包括脉石英和水晶,其中脉石英占 95% 以上,另一类属于玉髓,包括燧石和玛瑙,含量少于 5%,此外还有极少量的火山角砾岩(仅发现 1 块)和硅质灰岩;但从成器率来看,脉石英极低,大多为断块。

关于神泉寺遗址的石料来源,笔者曾作过详细的调查,在遗址附近湖相地层顶部的砾石层中发现呈块状的脉石英,根据地层对比,这些砾石层和文化层所在的层位相当,估计神泉寺遗址中的脉石英可能来自遗址附近。而玉髓来源同许家窑遗址一样,可能来源于附近由北而来的河床或原产地。从石料的质地来看,都没有明显的风化,尤其是玉髓,在所研究区内,堪称优质石料,结构完全符合细、密、匀、纯的要求,只是石料体积较小。

西白马营遗址 本遗址石料的特点是种类繁多,依原报告<sup>[13]</sup>统计如下:

表 2 西白马营遗址石料的种类及比例

The proportion of different raw material in Shenquansi site (%)

岩性	火山碎屑岩	脉石英	玛瑙	硅质灰岩	燧石	角岩	石英砂岩	片岩
件数	551	228	210	196	153	94	33	21
百分比	35.6	18.6	13.6	12.7	9.9	6.1	2.1	1.4

根据笔者观察其中玛瑙、燧石(本文中称玉髓)、脉石英和西部的神泉寺遗址中同类者相似,火山碎屑岩和盆地中部新庙庄者属于同类,其它岩石含量较少应为偶尔获得。

西白马营处于盆地中部和西部之间,其石料的这些特点应与其所处的地理位置有关,如遗址中的脉石英、玉髓(燧石、玛瑙)和神泉寺遗址比较接近,而火山角砾岩则和中部新庙庄中的同类石料一致。这也从侧面反映了西白马营人似乎并不刻意的选择某种石料,从石料分布来看,其选择范围最大应在 10km 范围之内。

从石料的质量来看,火山碎屑岩多少有些风化,脉石英颗粒较粗,硅质灰岩硬度较小,玛瑙和燧石质地较好但太小,因此,西白马营遗址的石料质量较差。

距神泉寺遗址不远的二和尚沟遗址其文化性质和石料与盆地中部的虎头梁文化几乎一模一样,从神泉寺到盆地中部的火山角砾岩原产地达数 10km。

### 3 不同时期的遗址对石料选择与利用的时序性变异

如前所述,本文的研究目标有两个,一是通过对石料产地的调查了解古人类的活动范围,另一个是通过石制品表面状况的观察,了解古人类在获取石料后,如何对石料进行处理,是直接打片,还是去粗取精后再运送到遗址中使用。对于后一个问题相对容易判断,虽然本文的研究还有待于从定性研究转为定量研究。但对于前一个问题则不容易有一个明确的判断,这是因为一方面石料的原始分布一般都有一个较大的范围,比如玉髓,虽然 90% 以上的石料都分布在原生地层附近,但仍有一部分石料可以沿着河流分布到很远的地方,因此要判断某一块石料的确切来源应当说是不现实的。另一方面,不同石料在遗址中含量不同,其原始产地距遗址的距离也不同,那么应该以哪一种石料确定的数据为人类的活动范围?

限于以上两方面的考虑本文对人类活动范围的复原也主要从两方面考虑。一是主要石料的分布范围代表人类的主要活动范围,二是特别注意各小区中特色石料(即原产地只在本小区者)的分布范围,此类石料更具有指示意义,但当含量特别少时,应慎重解释其指示意义。

### 3.1 旧石器时代中期

属于旧石器时代中期的遗址有许家窑、雀儿沟和板井子。从上述分析来看, 3 个遗址虽然由于所处的地理位置不同, 使用的石料相异, 如雀儿沟遗址的石料主要为火山岩和脉石英, 许家窑遗址的石料主要为脉石英, 一部分玉髓可能来自稍远的地区; 板井子遗址主要为隐晶硅质岩, 石料产地距遗址至少有 5km, 并且在石料被搬运到遗址之前, 石料都进行了一定程度的精选, 但总体来看其所属区域的代表性石料如西部的玉髓、中部的火山角砾岩和东部的隐晶硅质岩都仅限于在本区内使用, 说明人类的活动范围有限, 对石料的开发上也主要是随取随用, 或在距离稍远时做简单处理。

### 3.2 旧石器时代晚期早段

这一阶段的遗址主要有西白马营、神泉寺、新庙庄、大西梁南沟。从各区的主要石料来看, 各遗址的石料来源仍主要局限在遗址附近, 因此表现出强烈的“地方色彩”。如神泉寺遗址中的脉石英, 新庙庄遗址中的辉绿岩、安山岩、凝灰岩等在遗址附近都很容易获得; 但从各区的特色石料来看, 其使用范围虽也主要限于各自小区域内, 但也有极少量的石料可能被远距离输送(也可能是偶尔获得), 如神泉寺遗址中曾发现一块火山角砾岩, 新庙庄遗址中也有少量的玉髓, 说明到了旧石器时代晚期早段人类的活动范围与旧石器时代中期可能有所区别, 虽主要限于遗址附近, 但其最大活动范围已明显扩展到数 10km 之外。当然对石料的开发同上个阶段一样, 没有多少变化。

### 3.3 旧石器时代晚期晚段

这一时期人类在选择石料方式上出现了质的飞跃, 表现有三: 一是从石料的种类来看, 一些质量较差的石料加脉石英基本上被淘汰, 玉髓虽然质量不错, 但由于体积太小不易施展程序繁缛的细石叶技术, 在遗址中也少被采用; 而火山角砾岩、燧石在石制品中占有绝对优势。其二, 随着人类活动范围的扩大和对石料认识的深入, 优质石料被大量的远距离的运输, 如中部地区的特色石料火山角砾岩最东在油坊遗址, 最西在神泉寺附近的二和尚沟遗址, 相距达七八十公里, 最南在新庙庄, 最北抵虎头梁, 相距也有 30km; 东部地区的隐晶硅质岩已被输送到中部地区的虎头梁一带; 而西部地区的玉髓在中部地区的马鞍山一带也有许多发现。其三, 在远距离携带石料之前, 对石料都进行了严格选择, 砾石的表层风化壳、质地较差的部分都可能被去掉, 故遗址中的石料在细、密、匀、纯上都达到了一定的要求。

## 4 几点认识

通过对不同遗址中石器原料的时空对比, 我们可以得出如下几点认识:

1) 从旧石器时代中期到晚期, 人类活动范围逐渐扩大。这一方面表现为随着时间推移人类最大活动范围在逐渐扩大, 如旧石器时代中期人类的最大活动范围在 5—10km 范围之内, 而到了旧石器时代晚期, 已达数 10km。另一方面也表现为远距离活动频率的增加, 如在旧石器时代晚期早段, 人类很少去远处活动, 仍以在遗址附近活动为主; 而到了旧石器时代晚期晚段, 人类远距离活动十分频繁, 表现为遗址中远距离获得的石料占主要地位。

2) 从旧石器时代中期到晚期, 人们对同一种石料的选择也越来越精细。在旧石器时代中期甚至于旧石器时代晚期早段人们选择石料主要在遗址附近, 随取随用; 而在旧石器时代晚期晚段在原产地从粗料中选择细密匀纯的部分后再进行远距离输送, 而且制作楔型石核

的石料还要在遗址中进一步精选。

3)从石料的多样性来看,从旧石器时代中期到晚期劣质石料逐渐被淘汰。以脉石英为例,是泥河湾盆地尤其在盆地西部内分布最广泛的一种石料,在旧石器时代晚期晚段以前的遗址中多多少少都会出现,但在旧石器时代晚期晚段遗址中已不被采用。

4)虽然人们对石料的处理与搬运的距离有关,一般来说,搬运距离近者多随取随用,并不做特殊处理,搬运距离远者多去粗取精后再输送它处,但还有其它因素影响对石料的处理,如以盆地东部组群来看,油坊遗址就在石料产地,但其中的细石核对石料选择上比板井子、头马房的要求都要苛刻,可能与石器打制技术和器物的功能要求有关。

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## A PRELIMINARY STUDY ON RAW MATERIAL EXPLOITATION IN MIDDLE-UPPER PALEOLITHIC SITES IN NIHEWAN BASIN

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**Abstract:** In the past 20 years, Chinese scientists have discovered a large number of Paleolithic sites in the Nihewan Basin, North China, ranging from the Lower Paleolithic to the Upper Paleolithic. Among these sites, Que'ergou and Banjingzi, situated on the top of lake deposit or the third terrace, were dated to the Middle Paleolithic; the Lower Ximiaozihuang, Shenquansi and Xibaimaying, found in the bottom of the second terrace, were dated to the early Upper Paleolithic; while Hutouliang, Jiqitan, Erheshan, the Upper Ximiaozihuang, and Youfang were dated to the late Upper Paleolithic sites, and Touning and Touningou, situated in the upper section of the second terrace, were dated to Paleolithic-Neolithic transition period. Stone artifacts collected from these sites provide basic materials for the study of the change of raw material exploitation strategies from the Middle to the Upper Paleolithic in the Nihewan Basin.

Most kinds of rocks are suitable for stone tool manufacture, and the most frequently used materials by the Paleolithic in the Nihewan Basin are vein quartz, chalcedony, volcano breccia, concealed crystal silicon. Vein quartz is broadly distributed and can be easily obtained within the Nihewan Basin but with low quality. Chalcedony and some volcanic rock are only located in limited areas, such as the Gao Village, Yangyuan Country and along some branches of the Sangganhe River. They can be obtained in these areas and have better quality than the vein quartz. Chalcedony materials are relatively good with smooth and homogeneous internal consistency, but are generally small in size, mostly smaller than 5 cm in diameter. Volcano breccia can be found in the central areas of the basin, such as Guaiji and Ximiaozihuang. Concealed crystal silicon is distributed in the eastern areas of the basin, such as Touning and Donggutuo. The latter two kinds of rock have very similar texture, that is, some part fine while some is coarse.

In order to compare raw material exploitation strategies, the area where the target archaeological sites were located was divided into three parts: the East, the Central and the West.

**The East Part:** Concealed crystal silicon is the principal raw material used in the eastern part of Nihewan Basin. Though it is the principal raw material by three sites — Banjingzi, Youfang and Touning, the exploitation degree is different from site to site. Among them, the Youfang site, the youngest in time and nearest to the raw material source, yields well-made artifacts, which may be related to the application of microblade technology.

**The Central Part:** Sites within the central part of the basin include Que'ergou, Banjingzi, Hutouliang, Jiqitan, Shenquansi and Ximiaozihuang. Some kinds of raw materials were exploited at these sites, but volcano breccia is the most frequently used material in this region.

**The West Part:** Xujiayao, Shenquanis, Xibaimaying and Erheshenggou sites are situated in this district. While vein quartz and chalcedony are both used in the former three sites, the utilization of chalcedony here is unique. The exploitation of volcano breccia at the Erheshanggou site is another special character of this area.

After comparing all the sites in the basin by their distance to the material sources, the preference of different raw materials selected, and the technology in processing these materials, some interesting phenomena were observed through time:

**The Middle Paleolithic:** People at the three Middle Paleolithic sites, situated in different part in the basin, made use of different raw materials, i. e., lava and vein quartz as the main raw material at Que'ergou, vein quartz and chalcedony at Xujiayao, and concealed crystal silicon at Banjingzi. However, they are all local materials, obtained near the sites, within 10 km in distance.

**The early Upper Paleolithic:** No distinct change in the way raw material were handled can be observed at sites of this period from the previous one. However, a piece of volcano breccia and some chalcedony pieces were found at Xinmiaozhuang, which might indicate that ancient people had extended their activity range to 10 kilometers by accident.

**The late Upper Paleolithic:** In this period, great progress had been made in raw material selection. First, vein quartz almost disappeared from the site because of its poor quality; Chalcedony was seldom used, probably because its volume is too small to be used to produce microblade, even though its quality is fine. In the meantime, concealed crystal silicon and volcano breccia became the predominant raw material. Second, high-quality materials were transported beyond the ten-kilometer limitation. Volcano breccia, which is the characteristic material in the Central Part, appeared at the Youfang site of the East Part and the Erheshanggou site of the West Part, while the two sites are 70—80 km apart, and concealed crystal silicon was discovered in Yujiagou, 18 km west to the Youfang site in the East Part. Such material was also found at the Ma'anshan site. Third, some raw materials were flaked in their original place and only tool-blanks were brought to the site.

Based on the above observations and analyses, it is concluded that:

1. The activity territory of ancient people in the Nihewan Basin had been gradually extended from the Middle to Upper Paleolithic, from within 5—10 km to more than 10 km, and the frequency of long-distance activity increased.

2. More and more attentions were paid to the selection of higher-quality raw material through time.

3. The use of poor-quality material, especially vein quartz, decreased through time, even though it is the most abundant material in the basin.

4. Distance of raw material source to archaeological site played an important role in the way these materials were treated and processed. Materials that could be easily obtained were usually exploited casually, while materials that could only be procured from long distance would be selected and processed carefully. Of course there are other factors that can influence the processing of certain raw materials. For instance, people occupied the Youfang site fabricated delicate tools on concealed crystal silicon, a material with its source very close to the site, as a result of the application of microblade technology.

**Key words:** Raw material; Middle-Upper Paleolithic; Nihewan Basin