THE PALEOLITHIC ARCHAEOLOGY OF XINJIANG, MONGOLIA, AND NORTHERN TIBET

*2004 FIELD REPORT**

A Preliminary Description of Activities of the
Joint Mongolian-Russian-American Archaeological Expedition (JMRAAE)
and the Tibet Paleolithic Project (TPP)
in 2004

by

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Abstract

In 2004, our interdisciplinary approach to the investigation of high and arid Central Asia's earliest prehistory yielded a range of archaeological, paleoecological, paleogeographic, and geological data that collectively describe a complex, changing pattern of prehistoric human occupation of northwest China, Mongolia, and Tibet. The Joint Mongolian-Russian-American Archaeological Expedition (JMRAAE; http://www.ic.arizona.edu/~mongolia/) and the Tibet Paleolithic Project (TPP; http://paleo.sscnet.ucla.edu/TibetGroupPage.html) carried out three principal activities during the 2004 field season in China, Mongolia, and Tibet: (1) reconnaissance and surface collection of Paleolithic localities in the northern Xinjiang Uyghur Autonomous Region, China; (2) test excavation of a deeply stratified Paleolithic site in Bulgan province, north-central Mongolia; and (3) reconnaissance and test excavation of late Pleistocene/early Holocene localities in southern Amdo (Qinghai) province, Tibet (China).

Introduction

From 27 May through 30 July 2004 the Joint Mongolian-Russian-American Archaeological Expedition (JMRAAE) and the Tibet Paleolithic Project (TPP) continued a program of field research initiated in Mongolia in 1995, in Tibet in 2000, and this year in northwest China's Xinjiang Uyghur Autonomous Region. The preliminary results of the 1995—1998 Mongolia expeditions have been published as trilingual monographs (Derevianko, Olsen, and Tseveendorj 1996, 1998, 2000). A similar monographic discussion of the results of the 2000, 2002, and 2004 Mongolia expeditions is currently in preparation and in-depth results of JMRAAE investigations at Tsakhiurtyn Hondii (Flint Valley), Mongolia in 1995 and 1996 were published as a trilingual book in 2002 (Derevianko, Zenin, Olsen, Petrin, and Tseveendorj 2002). A number of additional publications describe the work accomplished to date by the Tibet Paleolithic Project; a comprehensive TPP bibliography is available on-line at: http://paleo.sscnet.ucla.edu/brantinghamPublications.htm.

Archaeological Investigations in Northern Xinjiang

The first half of June was spent in the Tacheng (塔城; *Uyg*. Çöçek) and Altay (阿勒泰; Altay) districts (地区; rayon) of the northern Xinjiang Uyghur Autonomous Region (新疆维吾尔自治区; Şincañ Uyghur Aptonom Rayon), expanding not only JMRAAE's geographical range of operation, but also the international scope of its personnel. The Xinjiang project coordinates the activities of Chinese, American, and Russian scholars and represents the first such trilateral archaeological project to be carried out on Chinese soil with the full cooperation of the Chinese Academy of Sciences (中国科学院), the State Cultural Relics Bureau (国家文物局), and their local representative offices.

Xinjiang's Pleistocene prehistory is currently very poorly understood, a fact particularly regrettable in light of the region's geographical position on the eastern margin of Central Asia, its vast size (ca. 1.6 million square kilometers; nearly *one-sixth* the territory of the modern People's Republic of China) and great ecological diversity. Sporadic, low density late Paleolithic remains are known from the Tash Kurgan (塔什库尔干; Taşqorgan) region in Xinjiang's far west (Xinjiang Institute of Cultural Relics and Archaeology 1995: 1-3) and from the southern margins of the Tarim Basin (塔里木盆地; e.g., Olsen *et al.* 1988, 1989; *see also* Xinjiang Institute of Cultural Relics and Archaeology 1995: 4-8; Wang and Du 1997: 29-70).

Although aceramic lithic assemblages have also been reported from the Ertix Valley (额尔齐斯河; Ertiş Däryasi) in northern Xinjiang's Altay district (Abdurrassul and Zhang 1997), none have been adequately chronometrically dated. Soviet and Russian expeditions in eastern Kazakhstan, southern Siberia, and western Mongolia have discovered abundant late Pleistocene archaeological materials in somewhat more securely datable contexts (e.g., Alekseev 1990; Derev'anko 1998; Derevianko and Markin 1998), thus JMRAAE's Xinjiang research design focuses on correlating Quaternary geological (and where relevant, Paleolithic archaeological) sequences in northern Xinjiang with those of adjacent, currently better known territories.

In June 2004, JMRAAE's 14 Xinjiang expedition participants completed a circumnavigation of the Junggar Basin (准噶乐盆地; Cuñghariyä), driving west and north from Xinjiang's capital, Ürümçi, to Altay via the Qaramay (克拉玛依) petroleum fields, and then along the northern and eastern margins of the Basin, first following the course of the Ertix River southeast from Altay to Fuyun (富蕴; Köktoqay), then southeast again to Qinghe (青河; Çiñgil), and south-southwest to Qitai (奇台; Guçuñ, the latter a loan word derived from the Chinese 古城 gŭchéng, or "ancient city") before returning to Ürümçi from the east. This circumnavigation of the Junggar Basin provided the opportunity to examine a number of well-known geological sequences and identify suitable territory for additional reconnaissance in 2005 and beyond.

Regrettably, large tracts of the southern Altai[1] piedmont are geologically unsuitable for Pleistocene prehistoric occupation. The predominant geology is metamorphic (mostly highly weathered granites) in nature and lithic raw material is scarce and highly localized at best. Although the expedition broke into three separate reconnaissance teams and conducted detailed spot surveys as far west as Habahe (哈巴河; Qaba; N 48° 03′ 24.9″, E 86° 24′ 53.1″), only occasional, typologically terminal Pleistocene or early Holocene surface scatters of artifacts were identified. On the other hand, the margins of the Junggar Basin south and west of Altay, especially the Fuhai (副海; Burultoqay) region, yielded much more abundant early archaeological materials.

An exceptionally large quarry-workshop was found near the Nongshishi Coal Mine in Tacheng (Çöçek) district (塔城地区农十师煤矿) at an altitude of roughly 1000 meters a.s.l. on both sides of the main Qaramay-Altay highway. Taking N 46° 38′ 56.0″, E 86° 02′ 07.8″ as an approximate center point, this surface distribution extends over an area of roughly 3X5 kilometers, with varying artifact densities suggesting intensive long-term use of the locally outcropping raw material, a dark cryptocrystalline rock

[1] "Altai" (Алтаи) refers to an extensive east-west trending mountain range that spans portions of Siberia, China, and Mongolia. "Altay" (阿勒泰) refers to a city (市, shähär) and larger administrative district (地区, rayon) in northern Xinjiang and is the preferred Romanized Uyghur spelling. Both words mean "gold" or "golden".

provisionally identified as quartzite. Heavily abraded Levallois-like nuclei – some as large as 20-25 cm in maximum dimension – and the byproducts of these cores dominate the assemblage, although occasional tools were also encountered, including bifacially worked pieces and trimmed flakes. Large blades and blade-like flakes are also characteristic of this assemblage. In general, the Nongshishi workshop materials resemble those from Shuidonggou, to the east in Ningxia (宁夏水洞沟; Ningxia Institute of Cultural Relics and Archaeology 2003). Parallels may also be drawn with surface materials collected in the Bulgan (*Mong*. Булган) and Uench (Уенч) regions of southwestern Khovd province (Ховд аймаг), Mongolia by Soviet expeditions in the 1980s (Alekseev 1990: 386-411; *see also* Jaubert *et al.* 1997). The densest concentrations of surface materials at Nongshishi were mapped but no sub-surface testing was undertaken in 2004. Marked variability in the degree of surface abrasion of artifacts was observed, even within single raw material types. The heavily abraded Levallois-like cores found on the surface are typologically identical to (and therefore presumably coeval with) unabraded specimens found eroding out of recent exposures, suggesting that a component of the Nongshishi assemblage may still be in situ.

Higher terraces of the Ertix River in the vicinity of Fuyun (富蕴县城; Köktoqay; N 46° 58′ 54.5″, E 89° 30′ 15.7″, 818m a.s.l.) yielded low-density surface scatters of large flakes and, in one instance, a loess sequence with similar materials apparently in situ. More detailed examination of these Fuyun assemblages will constitute one focus of the expedition's work in 2005.

A single day of reconnaissance in the region surrounding the settlement of Qinghe (青河县城; Çiñgil; N 46° 40′ 25.3″, E 90° 22′ 49.4″, 1221m a.s.l.) failed to identify any aceramic archaeological assemblages. Qinghe's geographical proximity to the Mongolian localities in Khovd *aimag* where Soviet-Mongolian expeditions recovered abundant Paleolithic surface materials in the 1980s suggests this region may warrant further investigation during subsequent field seasons, although the local geology seems unpromising from the perspective of lithic raw material for the production of artifacts or the presence of caves and rockshelters.

Archaeological Excavations in the Tolbor (Толбор) Valley, Mongolia

In mid-June, the combined expedition moved its focus of activities to the middle reaches of the Selenge River (Сэлэнгэ Мөрөн) in north-central Mongolia. The expedition established a base camp at N 49° 17′ 15.0″, E 102° 57′ 52.8″ (1039 meters a.s.l.), about 150 meters west of the Tolbor River, a few kilometers north of Unt' brigade in Khutag Öndör district, Bulgan province (Булган аймаг, Хутаг-Өндөр сум, Унть баг). In 2002, the expedition identified 15 localities on loessic fluvial terraces of the Tolbor south of its confluence with the Selenge:

Tolbor 01: N 49° 18′ 35.8″, E 102° 57′ 46.9″ (1017 meters asl)

Tolbor 02: N 49° 18′ 02.4″, E 102° 57′ 53.3″ (1059 meters asl)

Tolbor 03: N 49° 17′ 52.3″, E 102° 57′ 56.1″ (1050 meters asl)

Tolbor 04: N 49° 17′ 28.5″, E 102° 58′ 08.4″ (1073 meters asl)

Tolbor 4a: N 49° 17′ 23.7″, E 102° 58′ 14.2″ (1075 meters asl)

Tolbor 05: N 49° 17′ 13.7″, E 102° 58′ 09.2″ (1020 meters asl)

Tolbor 06: N 49° 14′ 57.3″, E 102° 57′ 05.2″ (1147 meters asl)

Tolbor 07: N 49° 13′ 12.1″, E 102° 55′ 49.8″ (1175 meters asl)

Tolbor 08: N 49° 13′ 03.7″, E 102° 55′ 32.2″ (1186 meters asl)

Tolbor 09: N 49° 12′ 12.5″, E 102° 54′ 35.0″ (1205 meters asl)

Tolbor 10: N 49° 12′ 11.2″, E 102° 54′ 12.4″ (1178 meters asl)

Tolbor 11: N 49° 10′ 25.4″, E 102° 51′ 36.2″ (1211 meters asl)

Tolbor 12: N 49° 10′ 06.5″, E 102° 51′ 16.6″ (1229 meters asl)

Tolbor 13: N 49° 09′ 40.2″, E 102° 49′ 58.7″ (1247 meters asl)

Tolbor 14: N 49° 09′ 35.7″, E 102° 49′ 56.8″ (1251 meters asl)

These localities represent primarily surface and shallowly buried occupations on fluvial terraces. All are aceramic with only sparse microlithic remains in evidence. Only one site (Tolbor 05, alongside

the main Bulgan-Mörön road) was subsurface tested in 2002. In June-July 2004, JMRAAE opened two 2X5-meter and several smaller *sondages* upslope from Tolbor 05, yielding many hundreds of lithic artifacts in an apparently undisturbed stratigraphic sequence exceeding two meters deep in some spots. Bone and horse tooth fragments as well as charred, presumably vegetal, organic material in direct association with the lithic industry were AMS radiocarbon dated by Beta Analytic in Miami, Florida, yielding disappointingly late Holocene dates hovering around 1000 years before present. Only four of the six samples submitted from Test Pit 1 and Test Pit 4 contained sufficient organic material to yield finite dates. Bioturbation is the most likely explanation for the disparity between the apparent typological antiquity of the Tolbor lithic assemblage, its deep stratigraphic position, and the associated late Holocene AMS dates. Extensive krotovina were noted during excavation, some reaching depths in excess of two meters, so it appears that the matrix within which at least some of the Tolbor localities rest is significantly bioturbated, warranting additional caution during planned excavations in 2005.

Absolute chronology aside, the typology of the aggregate Tolbor lithic assemblages suggests early Upper Paleolithic affinity; large side scrapers (skreblo, скребло), prepared polyhedral and Levallois-like cores, notched flakes, and large blades and blade fragments exhibiting secondary retouch dominate the collections. Typologically, these materials resemble a large blade assemblage excavated in 1999 by the Egiin Gol Survey Project at Site EGS 082, east of the Tolbor localities investigated by JMRAAE and, more distantly, the Shuidonggou (水洞沟) assemblage in North China (Ningxia Institute of Cultural Relics and Archaeology 2003). A standard radiometric date of 27,000 ± 390 BP (Beta-136515) was derived from a *Bison* calcaneum recovered in good stratigraphic context at EGS 082 (William Honeychurch, personal communication 2002). The unexpectedly young AMS dates from the Tolbor localities are just that much more perplexing in light of the lithic assemblage's typological congruence with the materials from EGS 082 in the Egiin Gol valley.

Archaeological Investigations in Amdo (青海, Qinghai) province, northern Tibet (China)

Beginning in late June, the Tibet Paleolithic Project, directed by Dr. P. Jeffrey Brantingham of UCLA (http://paleo.sscnet.ucla.edu/TibetGroupPage.html) initiated archaeological investigations in several areas of southern Qinghai. Since 2000, the expedition has worked at localities along the southern shore of Qinghai Lake (青海湖; *Mong.* Коко Hyyp; *Tib.* Tso Ngonbo or mTsho-sngon; elevation 3205 meters a.s.l.), especially in the vicinity of Heimahe (黑马河) and Jiangxigou (江西沟). In 2004, the expedition's activities included additional excavation of a stratified Pleistocene/Holocene locality on the western edge of Heimahe and the discovery and documentation of ice-wedge casts (Beta-194540, 19080±100 BP, two-σ calibration 22870-22410 BP) and a Holocene Neolithic site associated with a spring vent south of Jiangxigou (Beta-194541, 8170±50 BP, two-σ calibration 9270-9010 BP). Both of these Jiangxigou dates are of interest since the absolute chronology of the ice-wedge casts may allow identification and interpretation of Last Glacial Maximum sediments elsewhere in the vicinity and the early Holocene date associated with Neolithic remains suggests a surprisingly early occurrence of potentially stable, food-producing communities in this region. Both of these findings warrant substantial additional investigation. At Heimahe, four AMS radiocarbon dates have been generated on samples collected in 2004 (presented here as uncalibrated dates): Beta-194545, 11480±60 BP; Beta-194544, 11220±50 BP; Beta-194543, 11040±70 BP; Beta-194542, 10670±60 BP. These internally consistent dates are also in accord with previously generated ^{14}C determinations from this site, suggesting a terminal Pleistocene occupation of the south shore of Qinghai Lake.

Moving southwest from Qinghai Lake, the expedition established a camp in Yeniugou (野牛沟; N 35° 52′ 52.3″, E 94° 19′ 24.8″, 3726m a.s.l.), south of Golmud (格尔木, *Mong*. Голмуд, *Tib*. Gormo). After dividing into two groups, a day was devoted to pedestrian and vehicular survey of the narrow reach of the Yeniugou Valley south of camp. Although vehicle problems prevented half the team from

reaching its objective – a lake north of and above the Xidatan Valley – a representative sample of terrace and alluvial surfaces in Yeniugou was surveyed with only limited success.

From Yeniugou, the expedition moved south into the Xidatan (西大滩)Valley and established a base camp at N 35° 42′ 56.0″, E 94° 15′ 27.8″, south-southwest of the eponymous modern settlement, at an elevation of 4348 meters a.s.l. on the northern piedmont of the Burhan Budai Shan (布尔汗布达山), several kilometers south of National Highway 109 (the "Golmud-Lhasa Highway") and the Naiqiguoqin River (奈齐郭勤河); for a general geological and tectonic description of the Xidatan region, see Woerd et al. 2004.

While some expedition members mapped, surface collected, and initiated excavation of an archaeological site discovered in 2002 on a glacial moraine near the Xidatan base camp, other team members traveled south and west into the Kekexili (*Tib.* Hoh Xil) National Nature Reserve (可可西里国家级自然保护区) where they conducted reconnaissance for archaeological sites and collected cores from salt lakes for paleoclimatic reconstruction. The excavations at Xidatan yielded an assemblage of lithic artifacts including microblade cores and their products, some of which are fashioned on obsidian. This discovery is especially important since obsidian can be chemically traced to its geological source with great accuracy. Because the expedition has previously recovered obsidian artifacts from sites far south of the Xidatan Valley, we are optimistic that such remains may provide the opportunity to reconstruct patterns of population movement across the Plateau, especially if reliably associated radiocarbon dates can be obtained. One date (Beta-194553, 5670±40, two-σ calibration 6530-6390 BP) has been generated on charred material collected from subsurface contexts at Xidatan.

Bellezza's (2001, 2002) extensive archaeological reconnaissance of northern Tibet, especially the Chang Thang (Byang-Thang) region, suggests large scale movement of thinly-distributed, largely nomadic populations, as might be expected of the Holocene pre-Buddhist antecedents of northern Tibet's historic pastoralists (the *'brog pa* or *drokpa*). Recent surveys of the evidence for early human occupation

of the Qinghai-Tibet Plateau (Aldenderfer 2003; Aldenderfer and Zhang 2004) point out that although many archaeological sites are known between 3,600 and more than 4,800 meters above sea level, most are strictly surface occurrences and none are securely dated, leading to the general conclusion that the higher elevations of the Plateau may have been first inhabited at or just before the onset of the Last Glacial Maximum around 22,000 years ago.

The expedition's return to Xining (西宁) via National Highway 109 provided the opportunity to cursorily examine a large tract between Golmud and Qinghai Lake with an eye toward more detailed reconnaissance in future years. The stretch of territory between Hongshuihe (洪水河) and Dulan (都兰) seemed particularly promising since it comprises dissected loess-capped alluvial surfaces and, near Sandaohewan (三道河湾), massive limestone outcroppings, the latter with perceived high potential for rockshelters and caves. TPP members plan to return to the Dulan area in 2005 to conduct more intensive and extensive surveys of the region.

Conclusions & Prospects

The bulk of the 2004 archaeological and other collections have been transported to Novosibirsk, Beijing, Los Angeles, and Tucson where better facilities than those currently available in Ulaanbaatar, Xining, and Ürümçi will allow artifacts and other samples to be thoroughly analyzed before our next field season.

The joint expedition's goals will continue to include elucidation of the initial peopling of the highest and driest parts of Central Asia and subsequent population dynamics. Further analysis and interpretation of the chronometric and other analyses already completed and still underway will refine these general goals in the context of strategic planning for our 2005 and 2006 expeditions.

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