

***THE PALEOLITHIC ARCHAEOLOGY OF
THE GOBI DESERT, MONGOLIA***

1996 FIELD REPORT*

A Preliminary Description of Activities of the
Joint Mongolian-Russian-American Archaeological Expedition (JMRAAE)
in 1996

by

John W. Olsen, Ph.D.

Professor & Head
Department of Anthropology
The University of Arizona
P.O. Box 210030
Tucson, Arizona 85721-0030 USA

Voice: 520-621-6298
Facsimile: 520-621-2088
E-mail: olsenj@email.arizona.edu



October 1996

***© John W. Olsen, 1996. Not to be cited or quoted without the author's permission.**

Introduction

During June through August 1996 the Joint Mongolian-Russian-American Archaeological Expedition (JMRAAE) pursued a course of Paleolithic field research initiated under the aegis of a trilateral agreement signed in Ulaanbaatar in 1995. The preliminary results of last year's expedition are now available as a trilingual monograph (*Archaeological Studies Carried Out by the Joint Russian-Mongolian-American Expedition in 1995*, Russian Academy of Sciences, Novosibirsk, 1996. 327 pps. ISBN 5-7803-0001-1).

Four principal goals were achieved this summer: (1) continued excavations in Tsagaan Agui Cave, (2) additional sampling of unstratified open-air occurrences in Tsakhiurtyn Hondii (Flint Valley), (3) testing of two new cave sites in Shine Jinst *suum*, western Bayan Hongor *aimag*, and (4) survey of previously unexplored areas south of Tsagaan Agui base camp.

A total of six American, 12 Russian and 11 Mongolian participants (including eight Mongolian students) took part in the 1996 expedition. This expanded list of personnel, particularly on the Mongolian side, allowed this year's expedition to accomplish far more than was originally anticipated and proved a great boon in spite of corollary logistical problems of insuring sufficient food, water, vehicles, and shelter.

Continued Excavations in Tsagaan Agui Cave

The expedition's priority was to re-establish a base camp and initiate excavations in Tsagaan Agui Cave (N 44°42', E 101°10') in the eastern Gobi Altai range of Bayan Hongor *aimag*.

The dolomitic limestone solution cavity called Tsagaan Agui (White Cave) consists of a narrow, inclining entryway, a rotunda-like main chamber, and at least two smaller chambers behind the main rotunda. These innermost chambers were not systematically investigated during the 1995 field season but constituted one focus of the team's activities at Tsagaan Agui in 1996.

In 1988 and 1989, joint Soviet-Mongolian expeditions excavated a 16 x 2 to 6 meter trench spanning the drip line along the south margin of the cave's inclined entryway. In 1995 we cut back the north profile of that trench an additional 50 cm and extended it two meters east into the cave's main chamber. This year, we expanded the sounding in the main rotunda to the east and west in an attempt to determine the maximum depth of the culture-bearing deposits and resolve the degree to which post-occupational roof-fall has affected the disposition of underlying sediments. Bedrock and large blocks of dolomite debris occur at depths of as much as four meters below the present surface of the cave interior. The open chimney in the roof of the main rotunda and the presence of sporadically active streams within the cave complex itself have allowed erosional events profoundly effecting the composition and distribution of the cave's sediments.

The cave's "lower grotto", partially excavated in 1995, was untouched this year due to the increasing likelihood, based on preliminary sedimentary analysis, that the lower grotto contains principally materials redeposited from elsewhere in the Tsagaan Agui complex.

More than 800 stone artifacts were recovered in the Tsagaan Agui excavations in 1995. This year, an additional thousand artifacts were recovered in addition to, perhaps, twice that many pieces of *débitage* and unused flakes. While all artifacts were preliminarily classified in the field, at this writing only a small fraction have been thoroughly analyzed. Preliminary data from the 1996 excavations at Tsagaan Agui reinforce several general conclusions drawn at the end of the previous field season: (1)

raw material appears exclusively local (within just a few hundred meters of the cave entrance), consisting mostly of jaspers and other cryptocrystalline quartz, (2) a stratified cultural sequence representing the late prehistoric/early Bronze Age through Middle Paleolithic has been identified, (3) tools recovered from the deepest strata consist mostly of flake scrapers and comprise only a small portion (approximately 4%) of the lithic collection from these horizons, (4) flakes seem to have been derived from both prepared platform (Levallois-like) and polyhedral cores with primary reduction having taken place outside of the cave at the source of the raw material. The limestone massif containing Tsagaan Agui is littered with the waste products of lithic reduction. In 1995, a concentration of jasper and jasper-like cobbles was discovered just above the cave entrance, many of which are surrounded by large primary flakes and smaller *débitage* indicating in situ reduction. Detailed contour and scatter density mapping of this workshop was completed this year and analysis of these data will prove instructive as regards the origins of raw materials encountered in the Tsagaan Agui stone industry.

The faunal sample recovered from Tsagaan Agui in 1995 and 1996 is currently undergoing analysis by Professors Baryshnikov (large mammals) and Agadjanian (microfauna) in St. Petersburg. A wide range of mammalian and avian species has been identified thus far, many with significant paleoecological implications (e.g., *Bison*, *Gazella*, *Equus*, *Struthio*). In 1996, numerous midden samples were collected from nests of the desert vole, *Arvicola* cf. *A. argentatus* in the vicinity of the cave. Analysis of these remains will hopefully provide an additional line of paleoecological inference.

Two problematical chronometric dates are currently available for Tsagaan Agui, although more are expected before the end of the year. An infinite radiocarbon date (>42,000 bp, MGU-1449) was obtained from Horizon 5, about mid-way down the stratigraphic section of the cave's ramped entryway. A paleomagnetic determination indicating reversed (presumably Matuyama [R] chron) sediments is associated with the bottom of this same sedimentary column. Clearly, both these determinations are inconclusive as far as behavioral implications are concerned. Nine additional ¹⁴C samples are being submitted for AMS analysis this autumn.

Continued Investigations in Tsakhiurtyn Hondii (Flint Valley)

In 1995, Russian expedition member A. N. Zenin began doctoral dissertation research on the assemblage of stone artifacts collected last year from surface palimpsests south of the Arts Bogd Uul range. This year, a camp was established in the area again and work carried out for an additional two weeks to generate a larger sample of artifacts (n = ca. 20,000) at two new surface loci. Additional geological mapping of the area was completed and a number of smaller, but presumably chronologically related, surface concentrations recorded. Analyses are currently underway to determine the relationship among these aggregates and lithic industries from buried contexts elsewhere in the Gobi. A monograph focusing on the Flint Valley materials is planned for publication in 1997.

Excavations in Western Bayan Hongor Province

In 1996 two important new cave localities were investigated in Shine Jinst *suum*, western Bayan Hongor *aimag*, some 200 km west of Tsagaan Agui base camp.

Chikhen Agui (formerly Chikhen Khuver) rockshelter (N 44°46'22.6", E 99°04'06.4"), produced a stratified sequence of cultural materials in the rockshelter itself and in association with nearby spring vents, one of which is currently active. Ranging from aceramic microlithic materials at the top of the sequence to prepared core flake-based assemblages resembling the early Upper Pleistocene Kara Bom site in Siberia, the Chikhen Agui collections may contain technological evidence of the Middle-Upper

Paleolithic transition. Organic samples from relevant strata were extracted for ^{14}C determination at the University of Arizona.

Southeast of Shine Jinst *suum* headquarters, a locality known as Tsagaan Halga Agui (White Door Cave) was discovered at N 44°24'34.2", E 99°22'57.8". Although this rockshelter was found to be devoid of archaeological remains, the fact that the cave's stratigraphy consists of a sequence of frozen loess strata below ca. 60 cm leads us to be very enthusiastic about its potential as a source of paleoecological data. A sedimentological column was extracted for detailed analysis in Arizona.

Results of Reconnaissance Trips

During the 1996 field season a week-long reconnaissance was undertaken of potential archaeological localities in southeast Bayan Hongor and northwest Omnogov' *aimags*.

In Omnogov' (South Gobi) *aimag*, the Gurvan Tes and Sevrei regions were sampled extensively. Surfaces south of the Nemegt range in Gurvan Tes *suum* yielded low-density scatters of stone artifacts typologically associated with the late Pleistocene. Active dune fields in this area also produced later prehistoric materials including coarse sand-tempered ceramics in association with a jasper-based microlithic industry that suggest the region was characterized by significantly more abundant surface water including lacustrine niches in the early Holocene. East of Sevrei, the southern piedmont of the Dzolen Uul range yielded scattered surface occurrences of stone artifacts representing a long period of human activity; perhaps extending back as far as the last glacial maximum. Unfortunately, no caves or rockshelters were discovered during this trip, although inquiries made of local residents generated several possible leads to be pursued in future.

Shorter reconnaissance forays included visits to an active dune field east of Bayan Lig *suum* (Bayan Hongor *aimag*; N 44°34'29.3", E 100°39'58.6") where Neolithic materials, including dwelling foundations, outcrop among playa remnants. The Joint Expedition also visited the American Museum of Natural History's camp at Ukhaa Tolgod (see *National Geographic* 190(1): 70-89, July 1996) where Cretaceous reptiles and mammals are being excavated in abundance.

Conclusions & Prospects

The bulk of this summer's archaeological and other collections have been transported to Novosibirsk, Russia and Tucson, Arizona where better facilities than those currently available in Ulaanbaatar will allow artifacts to be thoroughly analyzed before our next field season in 1997. Mongolian expedition co-director, D. Tseveendorj will spend October/November, 1996 in Arizona (funding from University of Arizona) working with Olsen on the analysis of these materials. Russian co-director, A. P. Derevianko tentatively plans to spend December-January, 1996-1997 in Tucson (funding from Russian Academy of Sciences) outlining an English-language monograph on the Tsakhiurtyn Hondii localities for submission to a U.S. publisher in 1997.

Immediate goals for next year include continued excavation of Tsagaan Agui's main and inner chambers, further testing of Chikhen Agui rockshelter, and additional investigation of cave localities in Shine Jinst *suum*. Results of chronometric and other analyses currently underway will refine these general goals in the context of strategic planning for expeditions to be carried out in 1998 and 1999.