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New Data on Small Mammals of Neolithic Sites and Burial Grounds in Mongolia

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New data on small mammals of Neolithic sites and burial grounds in Mongolia

F. Khenzykhenova, D. Tumen, M. Erdene, N. Tsydenova, D. Khatanbaatar & N. Schepina

Abstract

New data about animals obtained by Mongolian paleoanthropologists, National University of Mongolia and Russian archaeologist, Institute of Mongolian, Buddist and Tibetan studies, Siberian Branch, Russian Academy of Sciences were obtained under the direction of Professors Dashzeveg Tumen and Myagmar Erdene. The faunistic materials were excavated from localities of different origins including burial grounds, old cities, and Neolithic sites in different areas of Mongolia. Species composition of the large mammal fauna included two species and, the small mammal fauna was represented by two species of lagomorphs, and six species of rodents which are also components of the recent fauna of Mongolia.

Key words: mammals, Anura, neolithic, burial grounds, graves, Mongolia

Introduction

Thanks to work conducted by paleoanthropologists of the Mongolian National University numerous localities were excavated throughout the vast territory of Mongolia during the last several decades (ERDENE 2008, TUMEN 2008). Since 2009 scientists began collecting the faunal remains of birds, anurans, and mammals in addition to their normal field work. This was made possible thanks to the sieving of loose deposits from the archaeological sites. This research has the potential to provide a deeper understanding of the paleoenvironment of humans and the climate during Neolithic time and will enable more light to be shed on building of the burial grounds and extent of old cities. Unfortunately these materials are not stratified as a rule and a careful stratigraphic analysis is one of our aims for the near future.

Further a short characteristic of some faunal localities are given.

Fig. 1: Geographic position of some Neolithic sites, burial grounds, and ancient cities in Mongolia. 1 - Khankh; 2 - Khaschaat; 3 - Dulaan uul; 4 - Zenchermandal; 5 - Tsagaan Chuluut; 6 - Avarga balgas; 7 - Barga els; 8 -Ulaan Suukh, Togootyn gol V; 9 - Sharkhad; 10 - Southern Gobi.

Faunistic localities

A. Neolithic sites

A.1. Barga els (fig. 1: 7; fig. 2: 1-2)

This site is located about 12 km south-east of the Munkhkhaan soum center on the sandy bank of a dry lake bed. Today, the bottom of the lake is covered with grassland-steppe habitat. The archaeological and faunal materials were collected from the sandy surface.

***Mammals*:** *Rodentia* gen. indet. – 2/1 (number of remains/number of individuals).

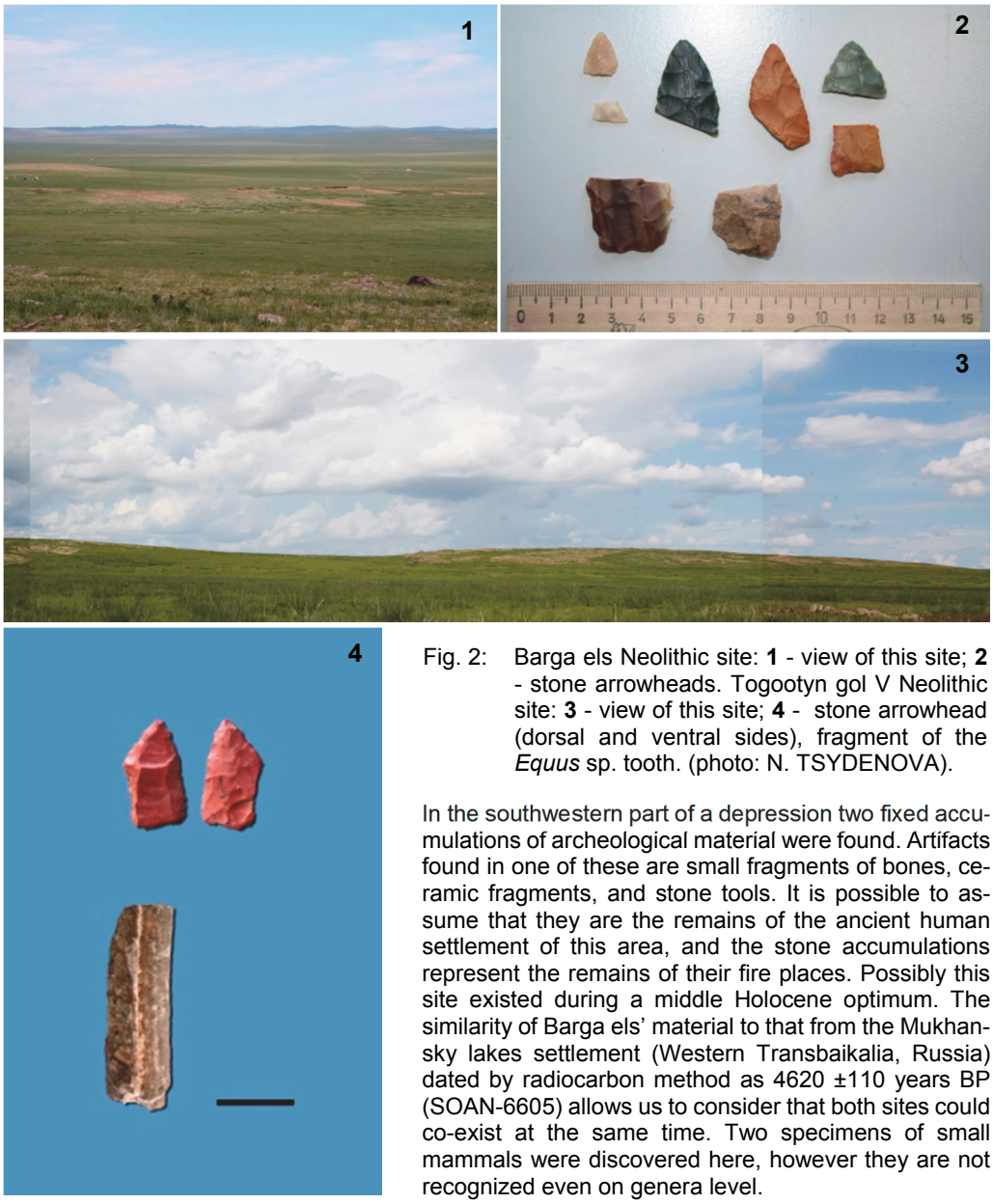

Fig. 2: Barga els Neolithic site: **1** - view of this site; **2** - stone arrowheads. Togootyn gol V Neolithic site: **3** - view of this site; **4** - stone arrowhead (dorsal and ventral sides), fragment of the *Equus* sp. tooth. (photo: N. TSYDENOVA).

In the southwestern part of a depression two fixed accumulations of archeological material were found. Artifacts found in one of these are small fragments of bones, ceramic fragments, and stone tools. It is possible to assume that they are the remains of the ancient human settlement of this area, and the stone accumulations represent the remains of their fire places. Possibly this site existed during a middle Holocene optimum. The similarity of Barga els' material to that from the Mukhansky lakes settlement (Western Transbaikalia, Russia) dated by radiocarbon method as 4620 ±110 years BP (SOAN-6605) allows us to consider that both sites could co-exist at the same time. Two specimens of small mammals were discovered here, however they are not recognized even on genera level.

A.2. Togootyn gol V (fig. 1: 8; fig. 2: 3-4)

This site is located the opposite bank from a burial ground Ulan suukh of a bronze age to coast of the dried up small river Togootyn gol at bottom stony terrace ledge (N 46° 39.194 ', E 111° 51.942 ', 1065 m a.s.l.). To conduct a search for cultural artifacts in layers, we constructed three test pits (10 m^2 in total). The obtained material included different stone artifacts, for example a microblade, microscrapers, and also fragments of a thin-walled vessel with cord prints and directly cut off nimbus. In test pit №1 at level of the 5th lytological layer (small- and medium-grained sandy loam of yellow color) the bone remain of a souslik has been determined by paleoanthropologists. In test pit № 3 at level of 2nd lytological layer (dark brown sandy loam) the fragment of a tooth from a species of *Equus* sp. was excavated.

***Mammals*:** *Spermophilus* sp. 1/1
Equus sp. – 1/1.

B. Ancient city

B.1. Avarga balgas (fig. 1: 6)

This side includes an ancient Mongolian city and is located in the Avarga River valley in the Delgerhaan Soum of Khentej aimak. The city is dated from the 12th to 13th centuries. It is thought that the city was built and maintained by the Mongolian khans, as a resort and curative spa. Excavation here was conducted by a joint Mongolian-Japanese expedition.

Mammals: *Marmota sibirica* Radde - 20/1

C. Burial grounds

C. 1. Khankh (fig. 1: 1)

Mammals: B-2 (B signs of a grave, 2 - number of this one) *Ochotona* sp. - 2/1

C. 2. Khashaat (fig. 1: 2)

***Mammals*:** B-5 *Spermophilus* sp. - 1/1

C. 3. Dulaan uul (fig. 1: 3)

Mammals: *Ochotona* sp. - 2/1, *Marmota* sp. - 3/1

C. 4. Zenchermandal (fig. 1: 4)

Mammals: B-2 *Marmota sibirica* Radde – 3/1
B-151 *Ochotona* sp. – 4/1, *Marmota* sp. – 1/1

C. 5. Tsagaan Chuluut (fig. 1: 5; fig. 3; fig. 4: 1-13)

This site is located 15 km to the east from Gurvanzagal soum center of Dornod aimak (N 49° 05' 23.5", E 115° 02' 46.6", 920 m a.s.l.), on a slope with a southern exposure on the mountain Tsagaan Chuluut which towers over extensive steppe.

Fig. 3: View of the Tsagaan Chulut burial grounds (photo: N. TSYDENOVA).

At this site, there are over 100 burials consisting mostly of tiled tombs of Bronze Age and also to the Mongolian time of the 12th and 13th centuries. All medieval burials graves have a northeast / south-west orientation. Graves that harbored male specimens included an assortment of objects that were buried with the person including: iron stirrups, outer birch-bark quivers, iron tips for arrows, carved bone overlays on a frame of saddles, bone buckles for belts, bronze mirrors, and a silver bowl. Female burials included beads of various sizes, beads, a silver earring, and the remains of a female headdress "bogtog-malgaj" (name of a female hair dress in Mongolia) are found.

Fig. 4: Some archaeological findings from Tsaagan Chulut (photos: D. KHATANBAATAR (1-10) & N. TSYDENOVA (11-13). **1**: beginning of the burial excavation, **2-3**: excavated burials, **4**: mirror, **5**: scissors, **6**: hammer, **7**: decorations of the belt, **8-9**: birch-bark quivers, **10**: arrowheads, **11**: microscrapers, **12**: flakes and spalls, **13**: fragment of pottery.

The bone remains of small mammals have been found near human remains.

Mammals:	B-1	*Ochotona* sp. - 9/1, *Cricetulus barabensis* Pall. - 4/2, *Lagurus lagurus* Pall. - 5/3
	B-3	*Marmota sibirica* Radde - 2/1
	B-6	*Marmota sibirica* Radde – 1/1
	B-165	*Ochotona daurica* Pall. - 4/1
Aves:	B-1	*Aves* gen. indet. - 3/1,

C. 6. Ulaan suukh (fig. 1: 8, fig. 5, fig. 6: 1-4, fig. 7: 1-4)

This site is located in the territory of Tuvshinshiree soum, Suhebatorsky aimak, approximately 40 km to the north of the soum center (N 46° 39.624', E 111° 51.343').

Fig. 5: View at the Ulaan suukh locality (photo: N. TSYDENOVA).

At this site, there were excavations of about 10 individual burials of Bronze Age, dated by radio-carbon in interval of 1300-1400 years BP. The burial ground occupied a part of the sloping stony foothills on the east slopes of Delgerhaan mountain and steppe high flood plain of almost dried up small river Togootyn-gol.

Fig. 6: Ulaan suukh burial ground. 1: view of burial area during the excavation process; 2 & 3: excavated burials; 4: elements of the burial building (photo: D. KHATANBAATAR).

In total about 10 tombs were excavated. All had a rectangular form composed of stone plates. One feature of a funeral ceremony the person buried in prone position.

Fig. 7: Some artifacts from Ulaan suukh. 1: shell decoration; 3: mineral decoration; 2: stone implement; 4: bone needle-case (photos: D. KHATANBAATAR).

Mammals:	B-3 A	*Ochotona cf. daurica* Pall. - 13/1
		Lasiopodomys brandti Radde - 2/1
	B-4	*Ochotona* sp. - 1/1
		Microtinae gen. indet. - 1/1
	B-5	*Lasiopodomys brandti* Radde – 6/2
	B-62	*Spermophilus* sp. - 1/1
		Marmota sp. - 6/1
Anura:	B-1	*Bufo* cf. *raddei* Strauch
Birds:	B-62	Aves gen. indet. - 1/1

C. 7. <u>Sharkhad</u> (fig. 1: 9)

Mammals: *Ochotona* sp. -1/1, *Marmota sibirica* Radde - 3/3, *Spermophilus* sp. - 1/1, *Vulpes* sp. - 1/1

C. 8. Southern Gobi (fig. 1: 10)

Mammals: *Meriones* sp., *Allactaga* sp.

Results

Faunal remains excavated in Mongolia belonged to the following animals:

A. Anura remains: *Bufo* cf. *raddei* (Strauch, 1876) - Mongolian toad

B. Aves remains : Aves gen. indet.

C. Mammal remains:

Lagomorpha:	*Lepus* sp. - hare,
	Ochotona cf. *daurica* Pallas - Daurian pika
Rodentia :	*Spermophilus undulatus* Pallas - longtailed Siberian souslik,
	Marmota sibirica Radde - Siberian marmot,
	Allactaga sp. - jerboa
	Cricetulus barabensis Pallas - striped hamster
	Meriones sp. – gerbil
	Lasiopodomys brandti Radde – Brandt's vole
Carnivora:	*Vulpes* sp. - fox
Perissodactyla:	*Equus* sp. - horse.

All mammal species discovered in this research project are typical steppe and semi-desert inhabitants of Mongolia both in the past and at present, but toads of the genus *Bufo* inhabit a wide range of environments, living in forests and grasslands across low-lying terrain and mountainous topographies. Species composition of the mammal fauna testifies that ancient humans lived in the natural conditions of arid climate and in the open landscapes during Neolithic, bronze age, and Mongolian time.

Conclusion

The species composition of ancient mammals from the burial grounds, ancient cities, and Neolithic sites show that the climate was arid during the time of the burials.

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