Anthropology of Archaeological Populations from Northeast Asia*

Abstract

Archaeological investigations show that during the prehistoric period (Neolithic, Bronze and Iron age and subsequent historical periods) of Northeast Asia the territory of the Asian region was inhabited by multicultural populations and occurred cross regional extensive migration resulted cultural exchange between the multicultural populations. Anthropological comparative studies of the archaeological populations from Northeast Asia through of time from Neolithic up to medieval period show that the prehistoric populations from region were great heterogeneity of anthropological traits. In the Neolithic and Early Bronze age, Xiongnu period the territory of Kazakhstan, Altai mountain, South Siberia, Xinjiang and Western Mongolia was inhabited by people with Caucasoid or Mongoloid and Caucasoid mixed anthropological features while the Baikal region, East Mongolia and Inner Mongolia were occupied by populations with developed Mongoloid anthropological traits.

Obtained results of anthropological comparative analysis between archaeological populations from the Northeast Asia show that the first wave of mongoloids migration from east to west and Caucasoid populations from west to east of Northeast Asia likely took place at the end of Neolithic period. The populations migrations continued during the subsequent historical periods and lasted up to medieval or Mongolian period. The cross regional migration of archaeological populations from Northeast Asia played noticeable role in history, culture, ethnogenesis and anthropological structure of populations from the region of Asia.

[Key Words] Neolithic age, Bronze age, Iron age, Xiongnu, cross regional migration, Caucasoid, Mongoloid

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Ⅰ. Historical and Archaeological Background

Archaeological investigations show that during the prehistoric period (Neolithic, Bronze and Iron age and subsequent historical periods) of Northeast Asia show that the territory of the Asian region was inhabited by multicultural populations and occurred cross regional extensive migration resulted intensive cultural exchange between the multicultural populations.

According to archaeological investigations that during Neolithic there were two different cultures of nomadic hunters and gatherers in Baikal region, Russian Far East and populations with agricultural economy in Inner Mongolia and Manchuria regions. However, during the period East Mongolia was the contact zone and key place where took place intensive admixture between nomadic hunters and gatherers from Baikal region on one side and agriculture populations from Northeast Inner Mongolia and Manchuria on another hand.(Okladnikov, 1970; Larichev, 1959, 1960; Dorj, 1971).

Archaeological studies reveal that during the Bronze and Early Iron Age (3rd millennium – 3rd century BC) there were significant cultural differences between the western and eastern parts of
Mongolia (Volkov 1967; 1981; Novgorodova 1987; 1989, Erdenebaatar 2002). In western Mongolia, a culture associated with stone kurgans, deerstone monuments, and rock art was widely distributed.

The western Mongolian Bronze and Early Iron Age culture belongs to the Altai-Sayan variant of the south Siberian Bronze and Iron Age culture (Tseveendorj, 1980, Tseveendorj and et.al 2003; Erdenebaatar, 2002; Volkov, 1967; Novgorodova, 1987). During this period there was intensive cultural admixture between the western and eastern regions of Mongolia, Baikal region and South Siberia. However, remains dated to the Bronze and Early Iron Age in eastern and central Mongolia are characteristic of the so-called slab grave culture: rectangular enclosures built using stone slabs set on edge, sometimes grouped in cemeteries.

The slab grave culture was widely distributed, not only all over eastern and central Mongolia, but also in surrounding areas, from the Lake Baikal region in the North to the Ordos in the South, as well as from the Khangai mountains in the west to Manchuria in the east. In spite of its wide distribution, remains of the slab grave culture are homogeneous in terms of surface and sub-surface construction techniques and the range of associated material culture (Navaan 1975; Tsybekhtarov 1998; Erdenebaatar 2002). Mongolian archaeologists suggest that the people associated with the slab grave culture were the direct ancestors of the Xiongnu (Sukhbaatar 1980).

During the last years, hitherto unknown monuments belonging to the Early Bronze age were discovered in the Altai mountain region of western Mongolia as a result of work by members of the joint Mongolian-Russian “Central Asian Archaeology 2002-7” project. Construction of these monuments is attributed to peoples successively affiliated with the Afanasevo culture (2800~2500 BC) of south

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(Fig.2) Bronze age, Surface construction of grave and other monuments.

(Fig.3) Xiongnu Chieftom (3rd BC-2nd AD) (Mongolian National Atlas, (2009))
Siberia and the Chemurchek culture (2500~1800 BC) of Northwest China, followed by the local Munkh Khairkhan culture (1800~1500 BC) of Northwest region of Mongolia, Baitag culture (1500~1200 BC) of Mongolian and Russian Altai mountain region, and Tevsh culture (1300~1100 BC) of Mongolian Southwest and South region (Erdenbaatar and Kovalev 2006; 2007).

According to historical sources and historical investigations (Ser-Odjav, 1970, 1977; Sukhbaatar, 1978, 1980: 1992, 2000, 2001; Khandsuren, 2005; Perlee, 1959; Batsaikhan, 2002; Batsuren, 2009), since the end of 1\textsuperscript{st} millennium BC and through the first millennium AD (the Early Mongolian Period), there were several tribal unions or chiefdoms and states in the Inner Asia, such as Xiongnu (3\textsuperscript{rd} BC-2\textsuperscript{nd} AD), Xianbei (2\textsuperscript{nd}-3\textsuperscript{rd} centuries AD), Joujan (4\textsuperscript{th}-5\textsuperscript{th} centuries AD), Turkic (6\textsuperscript{th}-8\textsuperscript{th} centuries AD), Uighur (8\textsuperscript{th}-9\textsuperscript{th} centuries AD), and Qidan (10\textsuperscript{th}-12\textsuperscript{th} centuries AD). In the article are given chiefdoms maps extracted from Mongolian National Atlas (2009). However, archaeological monuments, especially grave monuments, from the historic period are not well studied, with the exception of the Turkic and Uighur periods.

Xiongnu tribes union some tribes migrated to the west and eastward, and most of tribes stayed in their homeland. In discussing the ethnic identity of the Xiongnu, Chinese scholars, like their Western counterparts, have also argued about the relative plausibility of a Turkic, Mongolian, Finno-Ugrian, or Indo-European affiliation. The majority opinion is that they were of Mongol stock, but this point remains controversial. Mongol scholars have long maintained that the Xiongnu were proto-Mongolic people and trace the origins of the historical Mongols back to them. Official historiography of the former Mongolia maintained that as for “social development, customs and culture the Huns [i.e., the Xiongnu] were very close to the proto-Mongolian tribes of the Tungus group. It is quite
possible that the Huns were of Mongolian origin [sic] but that subsequently, after they seized the ‘Western Territory’ (Eastern Turkestan, Central Asia), they were largely assimilated by Turkic tribes” (Nicola Di Cosmo, 2002).


Archaeological investigation has shown that Xiongnu monuments or graves varied considerably in terms of size, surface and sub-surface grave construction, and associated grave goods. These differences have been interpreted as reflecting a pronounced gradient in social status (high status versus commoners) (Tseveendorj 1987; Batsaikhan 2002; Turbat 2004; Davydova 1995, 1996; Konovalov 1999). Russian archaeologist Davydova AB. (1995, 1996) suggests that Xiongnu grave construction can be divided into seven types: 1-burial without intra-burial construction; 2-flat graves without coffins; 3-frame coffins made of thin logs; 4-Stone cists; 5-Coffins; 6-whole log coffins; and 7-double chamber burials.

Most archaeologists and historians propose that the Xiongnu were the direct ancestors of early, medieval, and contemporary Mongolians (Dorjsuren 1961, 1966; Navaan 1975; Sukhbaatar 1978, 1980a,b., Tseveendorj 1987; 1993; Ser-Odjav, 1956, 1964, 1977; Batsaikhan 2002; Turbat 2004; Delgerjargal, 2005).
The principal archaeological monuments of the Turkic and Uighur periods include stone men (anthropomorphic stone carvings/statues), runic inscriptions, sacrificial monuments, settlement ruins, and graves. Approximately 400 stone men from the Turkic and Uighur periods have been discovered to date in Mongolia, mostly in the western and central regions (Bayar 1985, 1987, 1995).


One of the main historical sources is “The Secret History of Mongols,” which was written by unknown author in the 13\textsuperscript{th} Century AD. Archaeological investigation in Mongolia, as well as in surrounding territories has identified numerous sites stemming from the historic period, including settlements, stone men, inscriptions, rock art, and graves. About historic period 300 graves have been excavated in Mongolia and Buryatia. Typically, such graves were clustered in groups of 2-3 or 5-10, connected at the surface, and often had sheep tibia as grave inclusions.
II. Anthropological Study of Archaeological Populations from Inner Asia


The aims of the anthropological study of human remains belonging to different historical periods of Northeast Asia are: 1) To carry out craniofacial studies of human remains from different historical periods of the Asian region, 2) To conduct comparative craniofacial studies of prehistoric populations from Northeast Asia to clarify the cultural and historical relationship of prehistoric populations from the Northeast Asia and to solve some disputed problems of cross regional migration of ancient Asian populations from Neolithic through the medieval or Mongolian Period.

In the paper are given main results of craniofacial anthropological comparative studies of archaeological populations from Northeast Asia.
Ⅲ. Materials and Methods

During the visit in 2008 to Laboratory of Anthropology, Research Center for Chinese Frontier Archaeology of Jilin University, Changchun, China and Sector of Anthropology, Institute of Archaeology and Ethnography, Siberian Branch of Russian Academy of Sciences, Novosibirsk, and Department of History and Culture of Central Asia, Institute of Mongolian Studies, Buddology and Tibetology, Siberian Branch of Russian Academy of Sciences, Ulan-Ude (Russia) we carried out craniofacial anthropological study of human skeleton collection of archaeological populations from South Siberia, Buryatia and Inner Mongolia (China) belonging to different historical periods. Detailed information on studied human remains is given in the Cranial series used to provide a craniofacial comparative foundation for the studied human remains from China, Central Asia, Baikal Lake region and West and South Siberia encompass a timeframe from the Neolithic (8000~6000 BC) up to Mongolian period (13th century AD) and consist of twenty Neolithic samples, twenty six Bronze and Early Iron samples, twenty two Xiongnu and 1st millennium AD samples, and twenty four medieval and contemporary samples. Materials for comparison included craniofacial data on prehistoric populations from Mongolia (Tumen, 1977, 1985, 2006a, 2007); Central Asia, South Siberia, Russian Far East, China, Korea and Japan (Alexseev and Goehman, 1983; Buraev, 2006; Chikisheva, 2000, 2003; Kruykov and et al. 1978, Popov and et al., 1997; Pozdnyakov, 2000, 2006; Rykusha,1976; 1978; Wu and Olsen, 1985, Zhang, 2007, Zhu Hong, 2007).
### Table 1: Characteristics of the studied archaeological populations of Northeast Asia

<table>
<thead>
<tr>
<th>Historical period</th>
<th>Sample size</th>
<th>Site</th>
<th>Curation institution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INNER MONGOLIA, CHINA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neolithic</td>
<td>4</td>
<td>Hebei</td>
<td>Laboratory of Anthropology, Research Center for Chinese Frontier Archaeology of Jilin University, Changchun, China</td>
</tr>
<tr>
<td>Bronze</td>
<td>20</td>
<td>Jiangjungou</td>
<td></td>
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<tr>
<td>Early Iron age</td>
<td>38</td>
<td>Nileke</td>
<td></td>
</tr>
<tr>
<td>Warring States (403–221 BC)</td>
<td>33</td>
<td>Dashanquian, Tuchenzi</td>
<td></td>
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<tr>
<td>Xianbei</td>
<td>51</td>
<td>Ba gou, Hulunbuir-zalanur, Liaoning-Beipyo-Lamadong, Liaoning-Tsoyong-Zartai yanze,, Tsayuhiji, Sandovan, Tsayuhiji Ulaantsav, Ulaantsav-Sandu-dundaji, Tsayuzunjir-Chilansan</td>
<td></td>
</tr>
<tr>
<td>Qidan</td>
<td>26</td>
<td>Allucurchin-Yelyu, Liaoning-Faku-Imotai, Sandu-Chi-an-Haizi, Shiliin hot-dunsan, Ulaanhad-Chifeng-Ning-Shanz uizi Wunyur-zi</td>
<td></td>
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<tr>
<td>Yuan</td>
<td>34</td>
<td>Chengpuzi Zhenzishan</td>
<td></td>
</tr>
<tr>
<td><strong>SOUTH SIBERIA and Buryatia</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neolithic</td>
<td>8</td>
<td>Educhanka, Makarovo, Manzurka, Mariintui, Obhoi, Olihon</td>
<td>Sector of Anthropology, Institute of Archaeology and Ethnography, Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia</td>
</tr>
<tr>
<td>Early Iron age</td>
<td>40</td>
<td>Al'aGail and Al'aGail 2, Balyk-Sook, Baratal-2, Bike-3, Bor burgazy-1,2 and 3, Borotal-2, Buraty-8, Jolin-2, Kara Tenesh, Maltalu and Maltalu-80, Ulandryk-1 and Ulandryk-2</td>
<td></td>
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<tr>
<td>Pazyryk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xiongnu-Sarmat period</td>
<td>21</td>
<td>Kara-Bomr-11</td>
<td></td>
</tr>
<tr>
<td>Turcik period</td>
<td>22</td>
<td>Jolin-1, Yustyd-12</td>
<td></td>
</tr>
<tr>
<td>Mongolian period, Buryatia</td>
<td>17</td>
<td>Enhor, Kiya, Olihon, Onontycha, Ulanhad</td>
<td>Department of History and Culture of Central Asia, Institute of Mongolian Studies, Budology and Tibetology, Siberian Branch of Russian Academy of Sciences, Ulan-Ude, Russia</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>314</td>
<td></td>
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</tr>
</tbody>
</table>
The comparative study was conducted separately for each historical period. Hierarchical cluster analysis was used for comparative analysis and Euclidean distance is calculated as actual measurement of the precision of the mean difference between two populations (Knusmann, 1992). The cluster analyses are conducted using SPSS (version 15) statistical software.

**IV. Results and Discussion**

1. Neolithic populations

Craniofacial morphological study of human remains from Neolithic period of Altai mountain, Buryatia and Inner Mongolia China show great heterogeneity of morphological traits among populations of the historic periods. Due to obtained craniofacial data the Neolithic Afanasev population from Altai mountain characterize Caucasoid anthropological features while studied Neolithic populations from Inner Mongolia, Baikal lake region show typical mongoloid anthropological features. Nevertheless most taxonomic traits of some skulls from Kharagol site of Afanasev culture of Altai mountain demonstrate their mongoloid features. It may show that Neolithic Afanasev population from Altai mountain anthropologically was heterogeneity which can be explained by migration of mongoloid population from East Asia.

![Fig.10](image) "Geographic location of compared Neolithic populations from Northeast Asia"
The Euclidean distance analysis and cluster analysis (Fig.11) show that the compared Neolithic populations from Northeast Asia are divided into two major clusters. One of clusters includes several subclusters. All Neolithic populations from the Baikal lake region and East Mongolia include to one subcluster. Surprisingly, Neolithic populations from Usti-Isha and Itkuli site, Altai mountain join Neolithic population from Servo and Kitoi period of Baikal lake region in the subcluster. The second subcluster contains Neolithic populations from Central China (ban’po population), Neolithic population Tranbaikalia (Fafonov site) and Korean Neolithic population(Fig.11). The Neolithic populations from Amur river basin and Central Yakutia belong to the third subcluster. However, Davenkou population from East China locates separately in the first cluster.

The second cluster contains populations from West Mongolia, East Kazakhstan, Altai high mountain (Afanasev culture), South Turkmenistan. It can be concluded that all compared populations cluster from the region belonged to the second cluster. All populations from the second cluster anthropologically characterized by Caucasoid features.

However, the Neolithic population from Primor’e occupies in separate position in the clusters (Fig.11).

Morphologically, all populations belonging to one cluster are more similar to each other than to one from the other clusters. The results of this cluster analysis confirm that the Eastern Mongolian Neolithic population share closer phenetic affinities to the Neolithic population from the Baikal lake region. It supports a biological relationship of those populations. This anthropological type of the Neolithic population from the Baikal region was called by Russian anthropologist Ya.Ya.Roginskii (1978) as proto-mongoloid type and by G.F.Debets (1948) and V.P.Alexseev (1987) as Baikal anthropological type of the continental Mongoloids. According to those facts, there were very close biological relationship between the Neolithic inhabitants from Eastern Mongolia and Baikal region.

Archaeological evidence supports that in those region there was common Neolithic culture in the Eastern Mongolian and Baikal lake region (Dorj, 1975). The West Mongolia Neolithic population is included to one cluster with Caucasoid populations from South Siberia, Altai and Central Asia which means that the populations might have close relationship and had common ancestors in the early time. Surprisingly, Neolithic population from Itkuli and Usti-Isha sites in Altai mountain with Neolithic populations from Baikal lake region belong to same subcluster. The phenomenon may displays cross regional migration of the Neolithic populations from the region resulted admixture between the populations.
**HIERARCHICAL CLUSTER ANALYSIS**

Dendrogram using Average Linkage (Between Groups)
Rescaled Distance Cluster Combine

![Dendrogram](image)

(Fig. 11) Dendrogram showing relationship of compared Neolithic populations

2. Bronze and Early Iron age.

Obtained results of craniofacial studies of afanasev and pazyryk crania from the Bronze and Early Iron of Altai mountain, glazkov crania from Buryatia, nileke crania from Xingjian and warring states crania from Inner Mongolia illustrate that the Bronze and Early Iron age populations of the regions reveal great heterogeneity of morphological traits.

People with Caucasoid and mixed morphological features inhabited Altai mountain region, Xingjian
while population with developed Mongoloid traits occupied Buryatia (population from Glazkov culture) and warring state population from Inner Mongolia. However, some skulls among of the Late Bronze and Early Iron Age crania from Altia mountain exhibit more pronounced Mongoloid morphological features than seen in earlier times.

The Euclidean distance comparative analysis between Asian Bronze and Early Iron age populations exhibits that compared populations from Asia are divided in to several clusters. The separation of the compared population in to several clusters undoubtedly show that the studied Bronze and Early Iron Age populations from the region of the Asia, anthropologically were very heterogeneity (Fig. 13).

![Fig.12: Geographic location of compared Bronze and Early Iron age populations from Northeast Asia](image)

The first cluster combines the populations from Cis-Baikalia (Glazkov culture, Lena and Angar river Basin), East Mongolia (Slab grave culture) and Inner Mongolia (Warring States).

The second cluster divided in to several subclusters. The populations from Minisun basin, South Siberia (Okunev culture), Scythians from Altai mountain region and populations of culture without inventory from West Mongolia belong to the one subcluster. The second subcluster contains andronov populations from Central and North Kazakhstan and Minisun basin, South Siberia, afanasev populations from Altai mountain valley region and Minisun basin of South Siberia (Fig. 13.). The early Iron age populations of chandman culture from West Mongolia, Chaukhou culture of Xianjiang, tagar, tashtyk and karasuk cultures of Minusin basin, South Siberia, pazyryk of Altai mountain region, Scytians from Tuva and West Siberia exhibit in the third subcluster (Fig. 13.).
The separation of the Bronze and Early Iron Age populations from Northeast Asia into several clusters and subclusters can be explained by extensive and intensive cross-regional migration and admixture between Caucasoid and Mongoloid populations during this historical period.

***HIERARCHICAL CLUSTER ANALYSIS***

Dendrogram using Average Linkage (Between Groups)
Rescaled Distance Cluster Combine

According to V.P. Alekseev (1983), O. Ismagulov (1970) that Mongoloid and Caucasoid admixture in Central Asia (Kazakhstan and Kirgizia) and South Siberia increases step-by-step, beginning with the end of Neolithic and Early Bronze Age. Also the authors concluded that Transbaikalia and Cis-
Baikalian Bronze and Early Iron Age population with slab grave culture were mongoloids characterizing brachycrania, moderate high, broad, flattened face and flat nasal roots (Alexseev, 1983). Accordingly to the researchers' conclusion that there indeed was some eastern mongoloid admixture in Bronze and Early Iron age population from Altai mountain region, South Siberia. Based on many common decorative elements of artifacts and archaeological findings unearthed from excavations of archaeological grave monuments in South Siberia and Altai mountain region Russian archaeologists E.L. Novgorodova (1970, 1987, 1989) and V.V. Volkov (1967, 1981), Tsebyktarov (2006) noticed that the origin of Okuvev, Pazyryk, Tagar, Karasuk culture of South Siberia and Altai mountain region had some relations to Bronze Age Culture of Mongolia and Inner Mongolia and concluded that during the Bronze age period extensive cross regional migration took place in South Siberia, Mongolia and North China.

3. The Xiongnu period

The results of craniofacial study of Xiongnu crania from Altai, Buryatia show that the studied population was not anthropologically quite homogeneous. Due to obtained results the xiongnu sample from Altai characterize more pronounced caucasioid features than xiongnu samples from Buryatia.

The Euclidean distance methods applied for comparative analysis of craniofacial data on inhabitants from Xiongnu and subsequent historical period of Asia displays that all compared populations from those historical period of Asia are divided in to several major clusters (fig.15.).
The first cluster includes Usunians from Semirechiya (Central Asia) and East Kazakhstan, xiongnu-sarmatians from Altai high mountain, Turkic from Tuva (Fig. 15.). Xiongnu of Kirgizstan, Central and West Tuva, Xiongnu-sarmatians from Chui river basin, Altai mountain, sarmatians from West Kazakhstan, usunians from North Kazakhstan and Turkic from West Siberia include to the second subcluster. The third cluster contains usunians from Tyani-Shani mountain region and populations from xiongnu-sarmat period of Fergan valley, Tajikistan and West Turkmenistan. All Xiongnu populations from Xingjian, Mongolia and Altai mountain belong to fourth cluster. The fifth cluster includes mokhe people from Primor’e, xianbei from Inner Mongolia and Transbaikalia, and xiongnu from Transbaicalia ans Cis-Baikalia. The population from xiongnu period of Chukotka locate separate position in the cluster showing relationship between compared Asian populations from Xiongnu period.

****** HIERARCHICAL CLUSTER ANALYSIS ******

Dendrogram using Average Linkage (Between Groups)
Rescaled Distance Cluster Combine

(Fig. 15) Dendrogram showing historical relationship of populations from Xiongnu period and the 1st millennium AD. of Asia
The clustering of Xiongnu populations from Inner Asia clearly displays that Xiongnu anthropologically were very heterogeneous and at least there were six anthropological types for the Xiongnu population. The xiongnu populations from Mongolia, Altai mountain region and Xingjian (Chaukhou samples) belong to same cluster. It clearly show similarity of their anthropological type. Chaukhou skulls were studied by Russian anthropologist D.B. Pozdnyakov and C.A.Komissarov (2007).

According to conclusion of the authors the chaukou crania characterize mixed caucasiod and mongoloid anthropological features. The Caucasoid morphological traits related to local caucasiod inhabitant from the earliest historical periods of the region and mongoliod traits may genetically connect with migrants from mainland of North Asia. Studied xiongnu-sarmatian skulls from Altai mountain russian anthropologist B.A. Dremov (1990), B.P.Alexseev (1984) and T.A.Chikischeva et al. (2000) concluded that Xiongnu from the region belong to populations with mixed anthropological type of caucasiods and mongoloids and noticed that female skulls demonstrate more mongoloid features than male skulls. Due to conclusion of the authors the mongoloid peculiarities were originated from population from Bronze and Early Iron age, and Xiongnu populations of Mongolia and Baikal lake region.

The studied xianbei and xiongnu people from Baikal lake region and mokhe people from Far East include to one cluster and it means the population characterize common anthropological features (Fig.15.). Russian anthropologist G.F. Debets (1948, 1951) and B.P.Alexseev (1984) concluded that xiongnu people from Trans and Cis-baikal characterize anthropological features of northasian mongoliods. Chinese anthropologist Zhu Hong and Zhang Quan-chao studied xianbei crania from several sites of Inner Mongolia and noticed that anthropological features of studied xianbei crania show that the racial type is closely related to the modern North Asiatic Mongoloids, and some physical characteristics of those skulls are closer to modern Mongols and ancient populations in North China. In accordance with the conclusion the studied xiongnu and xianbei samples from Baikal and Inner Mongolia morphologically belong to the Central Asiatic variant of North Mongoloids.

As V.P.Alexseev and I.I.Gokhman (1983) concluded that Xiongnu migration from Mongolia to West through Altai and Tuva played an important role in ethnogenetical process, as well as anthropological structure of the region. V.P.Alexseev and I.I.Gokhman noticed that the Mongoloid anthropological component increases in local Caucasoid inhabitants of the region. This phenomena related with Mongoloid migrants from Mongolia in the late Bronze Age and Xiongnu period which is contemporaneous with the formation of the Xiongnu tribal union in Mongolia and Baikal steppe and
with the extension of the Xiongnu influence towards south and west. (Alexseev and Gokhman, 1984). Russian anthropologists G.F. Debets (1948), I.I. Gokhman (1960, 1967) and N.N. Mamonova (1979) studied Xiongnu skulls from Baikal region and the Far East and concluded about visible Caucasoid and Far-East mongoloids admixture in anthropological structure of population from this period. These two facts go well together with archaeological data and written Chinese sources (Alexseev and Gokhman, 1983).

According to recent historical and archaeological studies (Konovalov, 1999; Tsybektarov, 1998), ethnically and linguistically Xiongnu was not homogeneous. Based on the results of archaeological studies of Xiongnu in Mongolia, Ts. Turbat (2004) concluded that Xiongnu culture was created on the basis of mixture and combination of the Iron Age Slab graves culture and the culture of early nomads of North China. This process developed during 4th–3rd century BC (Turbat, 2004).

Investigated Xiongnu archaeological monuments Z.Batsaikhan concluded that in the beginning of the 3rd century BC, Indo-European groups migration across the territories of Inner Asia progressed in several stages. These migrations affected not only the development of ethno-culture in Mongolia but also had significant impact on all Central Asian populations and really represented an important feature of global processes of the time. On the other hand, a migration of groups from northern China to Northeast Asia occurred and based on archaeological evidence, these populations established the slab grave cultural complex as known from the territory of Mongolia and southern Siberia (Batsaikhan, 2002).

4. Early medieval and Mongolian period.

The results of craniofacial study of skulls from Early medieval (Turkic period) and Mongolian period of Altai mountain Baikal region, and skulls from Qidan and Yuan period from Inner Mongolia display that all studied human remains from those regions illustrate morphological features of North Asian Mongoloid populations.

Comparative analysis between the Early medieval period, Mongolia period, and Asian contemporary ethnic groups demonstrates that compared populations are separated into several clusters (Fig.17.). The Figure 17. shows that Cis-baikalian population from medieval period (XII-XIV c.) with contemporary tuvinians, buryats from Tunk and Transbaikal, kirgizs, and yakuts belong to one of the clusters. However all samples from early medieval (Burkhutai site-VI-X c.), Premongolian (X-XIV) and medieval (XII-XIV) periods of Transbaikalia, and contemporary Mongolians belong to one cluster (Fig.17.). Unpredictably Monglians from Mongolian Period (XII-XV c.), populations from medieval
period of Altai mountain and West Siberia belong to same cluster (Fig. 17.). The third cluster includes population from Mongolian period of East Buryatia (Eraven site sample), contemporary reindeer evenks and orochi (Fig. 17.). On the dendrogram (Fig. 17.) clearly is shown that the populations from Qidan and Yuan period, and contemporary Koreans join in same cluster. However Undugen samples from late Mongolian period of Buryatia occupies separate position in the cluster (Fig. 17.). Based on the cluster of medieval and modern populations from Inner Asia can be concluded that the ancient and contemporary populations from one cluster might had close historical and genetic relationship. i.e. contemporary Koreans, population from Qidan and Yuan period are very close to other in one hand, Tuvinians, Tunk Buryats, Transbaikalian buryats, Kirgizs and Yakuts might had close historical relationship with medieval population from XII-XIV century of Cis-baikalia.
V. Conclusion

Comparative craniofacial anthropological studies of human remains belonging to the archaeological and contemporary populations from Inner Asia through of time from Neolithic up to medieval or Mongolian period show that the studied populations above mentioned historical periods great heterogeneity of morphological or anthropological traits. In the Neolithic and Early Bronze age,
Xiongnu period the Altai mountain, Xingjian Western Mongolia was inhabited by people with Caucasoid or mixed morphological features of the Mongoloid and the Caucasoid while the Baikal region, East Mongolia and Inner Mongolia were occupied by populations with developed Mongoloid anthropological traits.

Obtained results of craniofacial comparative analysis between archaeological populations from Inner Asia show that the first wave of mongoloids migration from east to west and Caucasoid from west to east of Inner Asia likely took place at the end of Neolithic period. The population migrations continued during the subsequent historical periods and lasted up to medieval or Mongolian period. The cross regional migration of archaeological populations from Inner Asia played noticeable role in history, culture, ethnogenesis and anthropological structure of populations from the region of Asia.

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  2011년 1월 20일에 편집위원회에서 게재가 결정되었음.
고고학적 연구에 의해 동북아시아의 선사시대(신석기, 청동기, 철기와 그 이후의 역사적 시기)에 다양한 문화의 인류가 아시아 영역 안에 거주하였으며, 지역을 횡단하는 광범위한 이주의 발생이 다양한 문화의 인종 간에 문화적 교류라는 결과를 가져왔다는 사실을 알 수 있다.

신석기에서 중세 시대에 이르기까지 동북 아시아의 고고학적 인종에 대한 인류학적 비교 연구는 선사시대 인종이 인류학적 특성에 있어서 상당한 이질성을 띄고 있다는 것을 보여준다. 신석기 및 초기 청동기, 홍노 시대에 카자흐스탄, 알타이 산맥, 시베리아 남부, 신장(Xinjiang), 몽골 서부의 영역에는 코카서스인 혹은 몽골인과 코카서스인이 혼합된 인류학적 특징을 가지고 있는 사람들이 거주했던 반면, 바이칼 지역, 몽골 동부, 내몽골 지역은 발달된 몽골인의 인류학적 특성을 가지고 있는 인종이 점유하였다.

동북아시아의 고고학적 인종에 대한 인류학적 비교 분석의 결과에 의하면, 동부에서 서부로의 몽골인 이주와, 서부에서 동부로의 코카서스인의 이주의 첫 번째 파동은 신석기 시대 말엽에 발생한 것으로 추정된다. 인종의 이동은 이후 이어지는 역사 시대에도 지속되었는데, 중세 혹은 몽골시기까지 지속되었다. 동북 아시아의 고고학적 인종의 지역 횡단 이주는 역사, 문화, 민족기원, 아시아 지역 인종의 인류학적 구조에 있어서 중요한 역할을 했다.

[주제어] 신석기, 청동기, 철기, 홍노, 지역횡단, 코카서스인, 몽골인

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