doi:10.17746/1563-0110.2023.51.1.080-092

V.I. Molodin
Institute of Archaeology and Ethnography,
Siberian Branch, Russian Academy of Sciences,
Pr. Akademika Lavrentieva 17, Novosibirsk, 630090, Russia
Novosibirsk State University,
Pirogova 1, Novosibirsk, 630090, Russia
E-mail: molodin@archaeology.nsc.ru

The Current Model of Historical and Cultural Processes in the Stone and Bronze Ages of the Ob-Irtysh Forest-Steppe

This article presents a current perspective on the historical and cultural development of the population in the forest-steppe zone of the Ob-Irtysh interfluve in the Stone and Bronze Ages, using various methods of the natural and exact sciences, as well as archaeological findings from adjacent parts of the Ob and Irtysh basins. A geographic description of the region is given. The history of excavations in the region is outlined beginning from the 19th century to the present. A considerable amount of new materials has been accumulated, providing the basis for historical and cultural reconstructions. The study spans the period from the Upper Paleolithic through to the Late Middle Ages and the recent centuries. The initial peopling of the Baraba forest-steppe occurred 18 thousand years ago. Cultures of the Early and Late Neolithic, Early, Middle and Late Bronze Ages, and the transition to the Early Iron Age are listed. All periods have a reliable timescale. The archaeological potential of the region provides a basis for further elaborations of this model.

Keywords: *Ob-Irtysh forest-steppe, Neolithic, Bronze Age, cultural evolution model, absolute chronology, archaeological sites, researchers.*

Introduction

The expedition of D.G. Messerschmidt to Siberia (Fig. 1) essentially was the beginning of archaeological research over the vast subcontinent of Siberia. The history of archaeology evolved differently in each of the numerous corners of North Asia; yet, without assessing all the available evidence, it is impossible to have a complete picture of the dynamics of historical and cultural phenomena over this enormous region. This article discusses stages in studying historical and cultural processes in the forest-steppe part of the Ob-Irtysh interfluve. The conceptual framework explaining the development of the population that inhabited the region in the Stone and Bronze Ages will probably continue to be clarified over the following decades, since the scale of archaeological research in the region leaves much to be desired. Experience has shown that even in seemingly unpromising locations for research, there appear archaeological sites with evidence that fundamentally changes views on the historical past.

Study results

The forest-steppe Ob-Irtysh region was a strategically important part of the West Siberian Plain (Fig. 2).

Over all periods of the Stone and Bronze Ages, life flourished there, starting from the first appearance of humans in the region.

The forest-steppe belt between the Ob and Irtysh rivers (Fig. 3) covers a vast territory from east to west for over 700 km. In the north, the forest-steppe is bounded by the Vasyugan swamps and taiga zone, in the south by the Kulunda steppe. The length of the forest-steppe from north to south reaches about 200 km. The Ob and Irtysh Rivers—the largest watercourses of North Asia—flow from south to north, linking Central Asia with the taiga and tundra zones of Western Siberia. Fairly large rivers, such as Om, Tara, and Tartas, cross the forest-steppe from east to west and flow into the Irtysh River. The small Aley and Chaus rivers flow into the Ob River in the forest-steppe area. There are hundreds of lakes in the Ob-Irtysh forest-steppe, including Lake Chany, one of the largest in North Asia, and Lake Ubinskoye. Rivers and lakes of this region have huge fish supplies, which have attracted humans of all times. The river systems served as zones for population movement both in the meridional and latitudinal direction.

The Ob-Irtysh forest-steppe was characterized by a fairly mild climate favorable for life, and the wealth of biomass, which provided humans and wild and domestic animals with high-quality food. The set of herbs and grasses of unmatched quality has made it possible over the centuries to produce unrivalled dairy products there, for example, Baraba butter—the best in the world. In the spring-autumn period, numerous waterfowl colonies nested on the lakes, which were hunted by humans. The rivers and lakes were rich in fish, which at all times fed the humans.

Fig. 1. Statue of D.G. Messerschmidt—part of a sculptural composition of great explorers of Siberia, Khanty-Mansiysk.

Thus, this territory has always attracted the attention of humans. However, the lack of high-quality raw materials for the production of stone tools,

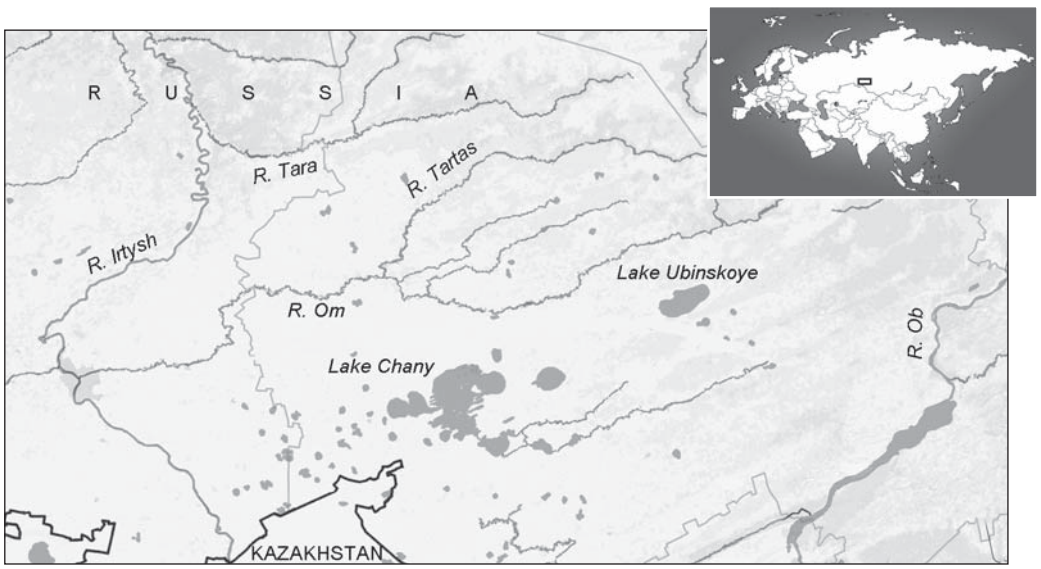

Fig. 2. Map of the Ob-Irtysh forest-steppe region.

Fig. 3. Ob-Irtysh region in summer and autumn.

and lack of copper ore for the manufacture of bronze items forced the inhabitants of the region to make expeditions to the south, to the Kazakh Uplands, and to the Irtysh basin, where these raw materials were available. Over time, search routes for places with resources needed for stone and bronze tool production became more extensive.

The arrival of humans in the Ob-Irtysh interfluve was associated with the end of the Pleistocene, when the retreat of the glacier to the north made the region accessible and attractive to the mammoth fauna, bison, giant deer, and horses, whose herds densely inhabited the plain, which was rich in herbage. The region remained just as favorable for life throughout the Holocene until the arrival of Russian explorers. It is no coincidence that many archaeological sites have been found there and their number has increased with every year.

The history of archaeological research in the region goes back to the 19th century. In 1879, N.M. Yadrintsev explored the forest-steppe Ob region and the Baraba forest-steppe. He mentioned numerous burial mounds in the forest-steppe Ob-Irtysh region and foresaw that in the future this territory would become a field for archaeological studies (Yadrintsev, 1883: 187) (Fig. 4). In 1886, Prof. D.N. Anuchin described a stone fish-bait found in Baraba (1886). Later, A.P. Okladnikov attributed it to the Serovo period of the Neolithic in the Baikal region (1950: 250). Thus, this find showed good prospects for a search for Neolithic sites in the forest-steppe Ob-Irtysh region.

In 1894, G.O. Ossovsky carried out archaeological research on the Om River (1896), and in 1895–1897, S.M. Chugunov, the Prosector of Tomsk University (1895, 1897a, b, 1898), performed large-scale excavations of burial mounds on the Baraba forest-steppe. Academician V.V. Radlov studied archaeological sites in the Altai, including the forest-steppe Ob-Irtysh region, in 1862–1902. In the vicinity of Lake Ubinskoye, he unearthed a large number of cemeteries (Martynov, 1964: 17). Although all these excavations, which were large-

Fig. 4. N.M. Yadrintsev.

scale for their time, did not reveal evidence of the Stone and Bronze Ages, they made it possible to establish directions for archaeological research in this region.

The first Stone Age site in the Ob-Irtysh region—the Neolithic site of Bugristoye near the city of Barabinsk in Novosibirsk Region—was discovered by E.M. Besser-Zasetsky in 1926 (Talitskaya, 1953: 337). The site contained extremely scarce evidence. In 1926–1928, V.P. Levashova studied the basin of the Om River (Ibid.), after which there was no scholarly research made in the region for a long time.

Large-scale archaeological works were carried out in the construction zone of the Novosibirsk hydroelectric power station on the Ob River in 1952–1954 by an expedition from the Leningrad Branch of the Institute of Archaeology of the Soviet Academy of Sciences, under the leadership of M.P. Gryaznov. Gryaznov and M.N. Komarova discovered several settlements and cemeteries of the Neolithic, and Early and Advanced Bronze Age in that area. Komarova identified the Kiprino and Irbino stages of the Neolithic, as well as sites of the Krotovo type, using evidence from the Ob sites (1956). The finds from the settlement of Irmen-1, explored by Gryaznov, made the basis for identifying the Irmen culture of the Late Bronze Age by N.L. Chlenova (1955). A monograph by Gryaznov on the history of the ancient population from the Upper Ob region (1956) also discussed issues of studying the Bronze Age on the Altai plain.

Starting in 1957, the Novosibirsk Archaeological Expedition from the Novosibirsk State Pedagogical Institute and the Novosibirsk Regional Museum of Local History, which was organized and headed for many years by T.N. Troitskaya, did research in Novosibirsk Region (Troitskaya, 1966). For over forty years, the teams of this expedition, led by Troitskaya and her students, discovered and explored a large number of settlements and cemeteries, including those of the Neolithic and Bronze Age (Troitskaya, Molodin, Sobolev, 1980).

An undoubtedly important event in studying the Ob-Irtysh interfluve was the discovery and research of the Rostovka cemetery on the lower reaches of the Om River, containing a rich set of magnificent bronze items of the Seima-Turbino type (Matyushchenko, Lozhnikova, 1971; Matyushchenko, 1975). Later, evidence from this site was described in a monograph by V.I. Matyushchenko and G.I. Sinitsyna (1988).

In the late 1960s, an expedition from the Ural State University under the leadership of V.F. Gening carried out large-scale research in the left-bank region of the Irtysh, including Baraba, as a part of rescue works.

In 1966, the Institute of History, Philology, and Philosophy of the Siberian Branch of the Soviet Academy of Sciences (now the Institute of Archaeology and Ethnography of the Siberian Branch of the Russian Academy of Sciences), which was organized as a part of the Siberian Branch of the Soviet Academy of Sciences and directed by Academician A.P. Okladnikov, initiated archaeological exploration of the forest-steppe Ob-Irtysh region. The first site researched in the region by Okladnikov was the Paleolithic site of Volchya Griva (1971). This site has been studied by various employees of the Institute to this day. Its excavations in 1975 were carried out under the leadership of the present author, and in recent years under the leadership of V.N. Zenin.

In 1973, the Western Siberian Archaeological Team of the North Asian Integrated Expedition was established at the Institute, under the leadership of the current author. One of the main goals of the team was archaeological research in the forest-steppe Ob-Irtysh region. Sites of the Stone and Bronze Ages where large-scale research was carried out included Abramovo-4, Vengerovo-2 and -3, Grishkina Zaimka, Kargat-6, Krokhalevka-1 and -4, Novochekino-1 and -3, Om-1, Preobrazhenka-3 and -6, Sopka-2, Tartas-1, Chicha-1, etc. Not only the present author, but also his students, as well as the students of Troitskaya, participated in field and analytical works for studying these sites, including N.V. Polosmak, A.P. Borodovsky, V.A. Zakh, L.N. Mylnikova, A.I. Solovyev, V.I. Sobolev, A.E. Grishin, I.A. Durakov, V.S. Elagin, L.S. Kobeleva, N.S. Efremova, Y.N. Nenakhova, M.S. Nesterova, A.V. Novikov, O.I. Novikova, D.V. Selin, M.A. Chemyakina, Z.V. Marchenko, Y.N. Garkusha, D.A. Nenakhov, E.A. Sidorov, and O.N. Khokhlova.

Starting in 1999, experts from the Eurasian Department of the German Archaeological Institute (Berlin) have worked in close cooperation with the team. The project was initiated by H. Parzinger, and included S. Hansen, A. Nagler, S. Reinhold (see, e.g., (Parzinger et al., 1999; Molodin et al., 2017 (2021))), J. Schneeweis, and H. Piezonka.

Starting in the early 2000s, the Neolithic and Bronze Age sites in the region were actively explored by an expedition from Kemerovo State University, under the leadership of V.V. Bobrov, A.G. Marochkin, and A.Y. Yurakova (see, e.g., (Bobrov, Marochkin, 2011; Yurakova, 2017; Bobrov, Marochkin, Yurakova, 2017a)).

An enormous amount of evidence on the Stone and Bronze Ages of Western Siberia, which was

accumulated over the years of intensive excavations in the forest-steppe Ob-Irtysh region, has made it possible to elaborate and publish a number of historical and cultural concepts, which are constantly being updated and clarified. This is actively facilitated by increasingly wide application of methods of the natural and exact sciences, and primarily geophysical monitoring of archaeological research. Fundamentally new data on the ancient history of the region have been obtained from studies with close collaboration of archaeologists and geophysicists (Epov, Molodin, Chemyakina, 2006), physicists and chemists (Fiziko-khimicheskoye issledovaniye…, 2006), paleogeneticists (Molodin et al., 2013), and anthropologists (Chikisheva, 2012).

The current concept of historical and cultural development of the region in the Stone and Bronze Ages is based on the work of scholars in the areas immediately adjacent to the Ob-Irtysh region and in the interfluve. An important contribution to research into the ancient history of the forest-steppe Ob region was made by V.I. Matyushchenko. In his 4-volume monograph *The Ancient History of the Population of the Forest and Forest-Steppe Ob Region* (1973a–c; 1974), he analyzed the evidence from the Novosibirsk region of the Ob obtained mainly in the excavations by Gryaznov and Komarova. The concept of historical and cultural evolution of populations living in the Ob region from the Neolithic to the Late Bronze Age proposed by Matyushchenko is directly related to cultural and historical processes that took place in the Ob-Irtysh region during that period.

V.F. Gening and his students elaborated a highly useful model of historical and cultural development of the left-bank forest-steppe Irtysh basin from the Neolithic to the Late Bronze Age (Gening et al., 1970). In this region, Gening and his students V.T. Petrin and L.L. Kosinskaya discovered the Upper Paleolithic (Gening, Petrin, 1985) and Mesolithic (Gening, Petrin, Kosinskaya, 1973) sites; their findings have contributed to our understanding of the evidence from this historical and cultural layer, found in the forest-steppe Ob-Irtysh region.

The works of M.F. Kosarev are also important. When studying the regions of Western Siberia adjacent to the forest-steppe belt (Trans-Urals, taiga zone of the Tom region), Kosarev constantly used evidence from the Ob-Irtysh region and correlated it with his new ideas (see, e.g., (1974, 1981, 1991)).

The research by E.N. Chernykh and S.V. Kuzminykh (1989) on Seima-Turbino bronzes, including their classification, typology, and origin of the Seima-Turbino transcultural phenomenon, are undoubtedly important for understanding the ancient history of the Ob-Irtysh region.

Y.F. Kiryushin and his students have made a valuable contribution to studying the past of the Ob-Irtysh forest-steppe. They elaborated a concept of historical and cultural evolution of the Altai plain, closely related to the problems of the Bronze Age in the Upper Ob region (Kiryushin, 2002; Kiryushin, Grushin, Tishkin, 2003).

In the mid-1970s, the current author suggested a model for historical and cultural development in the forest-steppe of the Ob-Irtysh interfluve in the Neolithic and Early Bronze Age (Molodin, 1977); some aspects of that model remain pertinent until today.

In the 1980s–1990s, an ambitious task was given by Academician A.P. Okladnikov to his student and author of this article to develop a model for historical and cultural development of the human populations that lived in the Baraba forest-steppe (the Ob-Irtysh interfluve), from the initial appearance of humans in the region to arrival of the Russians in the late 16th century. By 1983, this task was generally fulfilled and was presented as a post-doctoral dissertation (Molodin, 1983), defended already after the death of A.P. Okladnikov. This conceptual framework covered a gigantic period from the Late Upper Paleolithic to the Late Middle Ages–Modern Period. Subsequently, active field and analytical research was continued and several monographs were written using evidence obtained and study results. The most important study was *Baraba in the Bronze Age* (Molodin, 1985) and four volumes under the common title *Sopka-2* (Molodin, 2001, 2012; Molodin, Grishin, 2016, 2018). As a part of this task, fundamentally new sources were described, the concept of historical and cultural processes in the forest-steppe Ob-Irtysh region as a whole and at individual stages was clarified, and data on newly discovered cultural communities were included into the model. An attempt to present the model of historical and cultural evolution in the region on a qualitatively new level was made in a special study by the author of this article (Molodin, 2010).

The concept of historical and cultural development, formulated in 2010 and subsequently clarified, has changed significantly by now; therefore, a periodization elaborated with the current level of knowledge should be presented in this article.

In the 1980s, the appearance of humans in the forest-steppe Ob-Irtysh region, associated with the Final Upper Paleolithic, was detected at three sites—Volchya Griva, Vengerovo-5, and Novotartas,

where long-term excavations have been carried out (Okladnikov, Molodin, 1983). Discussion of the updated concept of historical and cultural processes in the forest-steppe Ob-Irtysh should begin with the recent discovery of a reliably stratified Upper Paleolithic site with lower cultural horizon dating back to 18 ka BP (Fig. 5) by V.N. Zenin, during excavations of the well-known site of Volchya Griva. Stone tools made of rock crystal contained in that horizon testify to connections of inhabitants of that site with the population of the Kazakh Uplands. The upper cultural horizon of the site was dated to ca 13 ka BP (Leshchinskiy, Zenin, Bukharova, 2021). The dates for the lower and upper horizons at the Volchya Griva site indicate that the initial human settlement in the region occurred much earlier than was previously believed. It is obvious that the latest discoveries at Volchya Griva have dramatically changed the ideas about the time when the first humans appeared in the south of the West Siberian Plain and the duration of their stay there in the Final Pleistocene.

Discovery and study in 2015–2017 of a settlement complex with household and ritual features at Tartas-1 in the Middle Irtysh region (Molodin et al., 2017 (2021)) (Fig. 6), for which radiocarbon dates have been obtained (Molodin, Reinhold, Mylnikova et al., 2018; Molodin, Nenakhov, Mylnikova et al., 2019), and the discovery of a number of similar sites in the vicinity of the Tai locality, primarily the sanctuary at Ust-Tartas-1 (Molodin, Mylnikova, Nesterova et al., 2022), have made it possible to identify the Barabinskaya culture of the Early Neolithic (Molodin, Kobeleva, Mylnikova, 2017). Its main feature was distinctive flat-bottomed pottery.

In addition to the cultural layers of the settlements, both sites included distinctive storage pits for fish with ritual offerings of animals, and Ust-Tartas-1 also had a sanctuary with rich plastic art. On the basis of over twenty dates, the culture was attributed to the late 8th–6th millennium BC. Its genesis is yet unclear, but there are reasons to search for its origins in the local Upper Paleolithic culture, which is especially vivid at the Cherno-Ozerye II site, studied in the left-bank region of the Irtysh (Gening, Petrin, 1985).

After reconsidering the evidence obtained earlier at Tartas-1, Ust-Tartas-1, and Vengerovo-2, which was necessary after identification of the Barabinskaya culture, scholars came to the conclusion that the Avtodrom-2/2 (Bobrov, Marochkin, Yurakova, 2017b) and Stary Moskovsky Trakt-5 (Bobrov, Marochkin, Yurakova, 2017a) sites, which had been previously associated with the Boborykino culture, actually belonged to the Barabinskaya culture.

It is clear today that the period between the Final Upper Paleolithic and Initial Early Neolithic (8th millennium BC) consisted of industries from Mesolithic sites, which were most similar to the evidence from the Mesolithic site of Cherno-Ozerye II (Gening, Petrin, Kosinskaya, 1973).

An undoubted innovation in studying the Neolithic in the Irtysh region was the assignment of previously studied and newly discovered sites of the region to the Late Neolithic Artyn culture (Bobrov, Marochkin, 2011). Our knowledge on burial practices among the carriers of this culture has been significantly expanded primarily through research on the large burial complexes at Vengerovo-2A and Ust-Tartas-2 (Molodin, Mylnikova, Nesterova, 2016), discovered

Fig. 5. Artifacts made of rock crystal (*1*) and the section's wall (*2*). The Paleolithic site of Volchya Griva. Excavations by V.N. Zenin.

Fig. 6. Type list of the Early Neolithic in the Ob-Irtysh region.
1–10 – Tartas-1; *11–13, 15* – Ust-Tartas-1; *14* – Vengerovo-2.

by Polosmak in the Northern Baraba forest-steppe (Polosmak, Chikisheva, Balueva, 1989). At these sites, accompanying earthworks in the form of ring-shaped ditches, pits, and layered burials were found for the first time in the burial practices of the Late Neolithic population. A specific set of grave goods included distinctive pottery, portable art, stone and bone tools. This culture fits the chronological period of the 5th to early 4th millennium BC.

The Early Bronze Age included two lines of cultural development. The first line is represented by settlements and burial grounds of the Comb-Pit community. The second line contains the contemporaneous sites of the Ust-Tartas culture. Materials of the Comb-Pit community have been found scattered over the Western Siberian forest-steppe, and also in the western, southwestern, and even eastern areas of the left bank of the Yenisey (Molodin, 2010). The Ust-Tartas culture was rooted in the local Neolithic and coexisted with the Comb-Pit cultural community. There was continuity in the burial practices of the Artyn and Ust-Tartas: round ditches, layered and secondary burials, stone and bone items with archaic appearance, and almost complete absence of pottery in the graves. Bronze items included tubular beads and items made of bronze foil (Molodin, Kobeleva, Reinhold et al., 2018). Stratigraphic observations and radiocarbon dates make it possible to date these cultural communities to the 4th millennium BC.

Two lines of development in the Ob-Irtysh forest-steppe were distinctly manifested in the Early to Advanced Bronze Age, in the settlements and burial grounds of the Odino and Krotovo cultures.

Stratigraphic observations indicate that the Odino culture existed earlier than the Krotovo (Molodin, Mylnikova, Novikova et al., 2011), although later they certainly coexisted. Despite some chronological proximity, the cultures differed in pottery, house-building traditions, and burial practices, and their carriers had their own anthropological and genetic distinctiveness (Chikisheva, 2012; Molodin, Pilipenko, Chikisheva et al., 2013). The Odino pottery most likely reflects an autochthonous line of development. The Odino archaic stone and bone assemblage contained advanced forms of bronze tools and weaponry; there is also some evidence of bronze casting (Durakov, Mylnikova, 2021), including spearheads and celts of the Seima-Turbino type. Ornithomorphic staffs, anthropomorphic and zoomorphic figurines as attributes of irrational activities occupied a special place in the material complex of the Odino people. Noteworthy is the presence of imported items (beads) and bones of domestic animals (sheep), which suggest migration from Western and Eastern Turkestan to the Western Siberian forest-steppe. According to radiocarbon dates (Molodin, 2012), the Odino people lived in the Irtysh region in the 3rd millennium BC.

The Krotovo culture of the Advanced Bronze Age, represented by extensive evidence from settlements and burial grounds, is distinguished by specific pottery, bone and bronze items, as well as by its traditions of house building and burial practices. The carriers of the Krotovo culture had bronze casting production and were engaged in the manufacture of Seima-Turbino bronzes. In the second half of the 3rd millennium BC, they coexisted with the Odino people. A part of the Odino population dissolved into the Krotovo people, while another part was forced to migrate to the north, into the southern taiga zone, and might have influenced the emergence of the Early Suzgun population. Over forty radiocarbon dates indicate the existence of the Krotovo people in the mid 3rd to early 2nd millennium BC (Molodin, Grishin, 2016).

In the early 2nd millennium BC, the Krotovo culture reached a late stage in its development, illustrated by the evidence from the Irtysh region (Gening, Stefanova, 1994). Currently, this culture is considered to be Late Krotovo (Cherno-Ozerye) (Molodin, 2014a); it shows specific burial practices, as well as weaponry and personal adornments, which reflected the change of bronze implements of the Seima-Turbino type to Andronovo timber-grave forms. This change originated under the influence of the Andronovo (Fedorovo) culture on the Late Krotovo (Cherno-Ozerye), and took place when the Andronovo (Fedorovo) people migrated to the region from the west-southwest. A series of radiocarbon dates indicate that the Late Krotovo (Cherno-Ozerye) culture existed in the early 2nd millennium BC.

Migrations of the Andronovo (Fedorovo) population from different habitation areas to the forest-steppe Ob-Irtysh region were cyclical. They resulted in the emergence of various models of cultural synthesis (Molodin, 2011).

Our knowledge of the Andronovo (Fedorovo) culture has been significantly expanded with evidence from the fully studied Stary Tartas-4 site, containing classic burial complexes of migrants from the west (Molodin, Novikov, Zhemerikin, 2002), the Andronovo cemetery of Stary Sad (Molodin, Mylnikova, Selin et al., 2016), and some sections of Tartas-1, where the number of the Andronovo

Fig. 7. Type list of the Pakhomovo culture of the Late Bronze Age.
1, *2*, *11–13* – Novo-Shadrino VII; *3–5*, *16*, *18*, *20*, *22–26*, *29* – Stary Sad; *6*, *15*, *27*, *28* – Grishkina Zaimka; *7*, *19*, *21* – Oskino Boloto (after (Korochkova, 2010)); *8–10* – Ir II (after (Korochkova, 2010)); *14* – Preobrazhenka-3; *17*, *30–37* – Tartas-1.

(Fedorovo) burials studied to date exceeds five hundred. Burial grounds of this culture, though having some peculiarities, in general show stable features of burial practice and grave goods typical of the Andronovo (Fedorovo) culture.

New evidence was obtained from the study of a recently discovered settlement complex of the Andronovo (Fedorovo) culture at Tartas-5, located in a constantly flooded floodplain (Molodin, Kobeleva, Reinhold et al., 2021). The latter fact is extremely

important: it is probably this landscape zone where we should look for the Andronovo (Fedorovo) settlement complexes.

A significant number of radiocarbon dates suggests the existence of that culture in the forest-steppe Ob-Irtysh region from the first centuries of the 2nd millennium BC until the 14th century BC.

In the Late Bronze Age, diverse cultures existed in the Ob-Irtysh region. Among them, the Irmen culture clearly dominated, spanning vast expanses of the forest-steppe. The study of the Irmen culture over its entire area (Molodin, 1985) produced new data indicating the 14th–10th centuries BC as the time of its existence (Chicha…, 2009). Its chronological framework was clarified using Bayesian statistical methods (Schneeweis et al., 2018). The carriers of the Barabinskaya variant of the Suzgun culture, with a distinctive pottery complex and architecture, lived in the north of the region, in the pre-taiga zone (Molodin, 1985).

Rich information has been accumulated on the eastern variant of the Pakhomovo culture, whose carriers entered the region under study in the Late Bronze Age from the Irtysh region along the banks of the Om and Tara rivers, and left burial grounds, ritual complexes, and settlements. The concept of a mosaic of cultures in the Ob-Irtysh region in the Late Bronze Age is complemented by evidence from the Stary Sad cemetery, described in a monographic study (Vostochniy variant…, 2017) (Fig. 7). The series of radiocarbon dates for that site generally fits the period from the late 2nd millennium to the first centuries of the 1st millennium BC.

Conclusions

The ethnic and cultural situation evolving in the Ob-Irtysh interfluve during the Late Bronze Age is reflected by a mosaic of the above-mentioned cultural entities, which became the basis for cultures in the transitional period from the Bronze to Iron Age (Molodin, 2014b).

It is hard to overestimate the potential of large-scale multidisciplinary studies on the settlement of Chicha (Baraba forest-steppe), whose findings have made it possible to reconstruct the situation in the south of the West Siberian Plain in the transitional period from the Bronze Age to the Early Iron Age at a qualitatively new level (Chicha…, 2001, 2004, 2009). Cultural complexes of the Late Irmen, Krasnoozerka, Atlym, Zavyalovo, Berlik, and Gamayun cultures have been identified at this site (Mylnikova, 2015). A series of over forty radiocarbon dates reliably attribute the transition from the Bronze Age to Early Iron Age to the 10th–8th centuries BC.

There is no doubt that new studies in this region will continue to bring about remarkable discoveries into the historical past of Siberia.

Acknowledgments

This study was supported by the Russian Science Foundation, Project No. 20-18-00111 “Mobility and Intercultural Contacts in Emergence and Development of Societies in Western Siberia (Antiquity – Middle Ages – Modern Age)”.

References

Anuchin D.N. 1886
O nekotorykh svoyeobraznykh drevnikh kamennykh izdeliyakh iz Sibiri. In *Trudy VI Arkheologicheskogo syezda*, vol. 1. Odessa: pp. 35–46.

Bobrov V.V., Marochkin A.G. 2011
Khronostratigrafiya neoliticheskikh kompleksov poseleniya Avtodrom-2. In *Problemy arkheologii, etnografii, antropologii Sibiri i sopredelnykh territoriy*, vol. XVII. Novosibirsk: Izd. IAET SO RAN, pp. 14–19.

Bobrov V.V., Marochkin A.G., Yurakova A.Y. 2017a
Zhilishche epokhi neolita s poseleniya Stariy Moskovskiy Trakt-5 (rezultaty rabot 2017 goda). In *Problemy arkheologii, etnografii, antropologii Sibiri i sopredelnykh territoriy*, vol. XXIII. Novosibirsk: Izd. IAET SO RAN, pp. 45–49.

Bobrov V.V., Marochkin A.G., Yurakova A.Y. 2017b
Avtodrom 2—a Late Neolithic (Artyn culture) site in the Baraba forest-steppe, Western Siberia. *Archaeology, Ethnology and Anthropology of Eurasia*, vol. 45 (1): 49–61.

Chernykh E.N., Kuzminykh S.V. 1989
Drevnyaya metallurgiya Severnoy Yevrazii (seiminsko-turbinskiy fenomen). Moscow: Nauka.

Chicha – gorodishche perekhodnogo ot bronzy k zhelezu vremeni v Barabinskoy lesostepi (perviye rezultaty issledovaniy). 2001, 2004, 2009
V.I. Molodin, H. Parzinger, Y.N. Garkusha, et al. Vols. 1, 2, 3. Novosibirsk: Izd. IAET SO RAN.

Chikisheva T.A. 2012
Dinamika antropologicheskoy differentsiatsii naseleniya yuga Zapadnoy Sibiri v epokhi neolita – rannego zheleza. Novosibirsk: Izd. IAET SO RAN.

Chlenova N.L. 1955
O kulturakh epokhi bronzy lesostepnoy zony Zapadnoy Sibiri. *Sovetskaya arkheologiya*, vol. XXIII: 38–57.

Chugunov S.M. 1897a
O raskopkakh v Kainskom okruge Tomskoy gubernii. In *Otchety arkheologicheskoy komissii za 1895 g.* St. Petersburg: pp. 217–225.

Chugunov S.M. 1897b
Svedeniya o kurganakh v Kainskom okruge Tomskoy gubernii. In *Otchety arkheologicheskoy komissii za 1895 g.*, App. V. St. Petersburg: pp. 138–140.

Chugunov S.M. 1898
Otchet o raskopkakh v Kainskom uyezde Tomskoy gubernii. In *Otchety arkheologicheskoy komissii za 1896 g*. St. Petersburg: pp. 198–234.

Durakov I.A., Mylnikova L.N. 2021
Na zare metallurgii: Bronzoliteynoye proizvodstvo naseleniya Ob-Irtyshskoy lesostepi v epokhu ranney bronzy. Novosibirsk: Izd. IAET SO RAN.

Epov M.I., Molodin V.I., Chemyakina M.A. 2006
Itogi i perspektivy geofizicheskikh issledovaniy arkheologicheskikh pamyatnikov Altaya i Zapadnoy Sibiri. In *Sovremenniye problemy arkheologii Rossii*, vol. 1. Novosibirsk: Izd. IAET SO RAN, pp. 76–90.

Fiziko-khimicheskoye issledovaniye keramiki (na primere izdeliy perekhodnogo vremeni ot bronzovogo k zheleznomu veku). 2006
V.A. Drebushchak, L.N. Mylnikova, T.N. Drebushchak, V.V. Boldyrev, V.I. Molodin, E.I. Derevianko, V.P. Mylnikov, A.V. Nartova. Novosibirsk: Izd. SO RAN.

Gening V.F., Gusentsova T.M., Kondratiev O.M., Stefanov V.I., Trofimenko V.S. 1970
Periodizatsiya poseleniy epokhi neolita i bronzovogo veka Srednego Priirtyshya. In *Problemy khronologii i kulturnoy prinadlezhnosti arkheologicheskikh pamyatnikov Zapadnoy Sibiri*. Tomsk: Izd. Tom. Gos. Univ., pp. 12–51.

Gening V.F., Petrin V.T. 1985
Pozdnepaleoliticheskaya epokha na yuge Zapadnoy Sibiri. Novosibirsk: Nauka.

Gening V.F., Petrin V.T., Kosinskaya L.L. 1973
Perviye poseleniya epokhi pozdnego paleolita i mezolita v Zapadnoy Sibiri. In *Iz istorii Sibiri*, iss. 5. Tomsk: Izd. Tom. Gos. Univ., pp. 24–47.

Gening V.F., Stefanova N.K. 1994
Chernoozerye-1 – mogilnik epokhi bronzy Srednego Priirtyshya. Yekaterinburg: [s.n.].

Gryaznov M.P. 1956
Istoriya drevnikh plemen Verkhney Obi po raskopkam bliz sela Bolshaya Rechka. Moscow, Leningrad: Izd. AN SSSR. (MIA; No. 48).

Kiryushin Y.F. 2002
Eneolit i rannyaya bronza yuga Zapadnoy Sibiri. Barnaul: Izd. Alt. Gos. Univ.

Kiryushin Y.F., Grushin S.P., Tishkin A.A. 2003
Pogrebalniy obryad naseleniya epokhi ranney bronzy Verkhnego Priobya (po materialam gruntovogo mogilnika Teleutskiy Vzvoz I). Barnaul: Izd. Alt. Gos. Univ.

Komarova M.N. 1956
Neolit Verkhnego Priobya. *KSIIMK*, No. 64: 93–103.

Korochkova O.N. 2010
Vzaimodeistviye kultur v epokhu pozdney bronzy (andronoidniye drevnosti Tobolo-Irtyshya). Yekaterinburg: Ural Yur Izdat.

Kosarev M.F. 1974
Drevniye kultury Tomsko-Narymskogo Priobya. Moscow: Nauka.

Kosarev M.F. 1981
Bronzoviy vek Zapadnoy Sibiri. Moscow: Nauka.

Kosarev M.F. 1991
Drevnyaya istoriya Zapadnoy Sibiri: Chelovek i prirodnaya sreda. Moscow: Nauka.

Leshchinskiy S.V., Zenin V.N., Bukharova O.V. 2021
The Volchia Griva mammoth site as a key area for geoarchaeological research of human movements in the Late Paleolithic of the West Siberian Plain. *Quaternary International*, vol. 587/588: 368–383.

Martynov A.I. 1964
Istoriya izucheniya drevnego proshlogo Sibiri. In *Istoriya Sibiri: Maket I toma*. Ulan-Ude: [s.n.], pp. 9–33.

Matyushchenko V.I. 1973a
Drevnyaya istoriya naseleniya lesnogo i lesostepnogo Priobya (neolit i bronzoviy vek). Pt. 1: Neoliticheskoye vremya v lesnom i lesostepnom Priobye (Verkhneobskaya neoliticheskaya kultura). Tomsk: Izd. Tom. Gos. Univ. (Iz istorii Sibiri; iss. 9).

Matyushchenko V.I. 1973b
Drevnyaya istoriya naseleniya lesnogo i lesostepnogo Priobya (neolit i bronzoviy vek). Pt. 2: Samusskaya kultura. Tomsk: Izd. Tom. Gos. Univ. (Iz istorii Sibiri; iss. 10).

Matyushchenko V.I. 1973c
Drevnyaya istoriya naseleniya lesnogo i lesostepnogo Priobya (neolit i bronzoviy vek). Pt. 3: Andronovskaya kultura na verkhney Obi. Tomsk: Izd. Tom. Gos. Univ. (Iz istorii Sibiri; iss. 11).

Matyushchenko V.I. 1974
Drevnyaya istoriya naseleniya lesnogo i lesostepnogo Priobya (neolit i bronzoviy vek). Pt. 4: Yelovsko-irmenskaya kultura. Tomsk: Izd. Tom. Gos. Univ. (Iz istorii Sibiri; iss. 12).

Matyushchenko V.I. 1975
Mogilnik u d. Rostovka. In *Arkheologiya Severnoy i Tsentralnoy Azii*. Novosibirsk: Nauka, pp. 129–137.

Matyushchenko V.I., Lozhnikova G.I. 1971
Raskopki mogilnika u d. Rostovka. In *Poleviye raboty 1969 g*. Tomsk: Izd. Tom. Gos. Univ., pp. 18–34.

Matyushchenko V.I., Sinitsyna G.I. 1988
Mogilnik u derevni Rostovka vblizi Omska. Tomsk: Izd. Tom. Gos. Univ.

Molodin V.I. 1977
Epokha neolita i bronzy lesostepnogo Ob-Irtyshya. Novosibirsk: Nauka.

Molodin V.I. 1983
Baraba v drevnosti. D. Sc. (History) Dissertation. Novosibirsk.

Molodin V.I. 1985
Baraba v epokhu bronzy. Novosibirsk: Nauka.

Molodin V.I. 2001
Pamyatnik Sopka-2 na reke Omi. Vol. 1: Kulturno-khronologicheskiy analiz pogrebalnykh kompleksov neolita i rannego metalla. Novosibirsk: Izd. IAET SO RAN.

Molodin V.I. 2010
Sovremenniye predstavleniya ob epokhe bronzy Ob-Irtyshskoy lesostepi (k postanovke problemy). In *Arkheologicheskiye izyskaniya v Zapadnoy Sibiri: Proshloye, nastoyashcheye, budushcheye (k yubileyu professora T.N. Troitskoy)*. Novosibirsk: Izd. Novosib. Gos. Ped. Univ., pp. 61–76.

Molodin V.I. 2011
Migratsii nositeley andronovskoy kulturno-istoricheskoy obshchnosti v Barabinskuyu lesostep. In *Drevneye iskusstvo v zerkale arkheologii: K 70-letiyu D.G. Savinova*. Kemerovo: Izd. Kem. Gos. Univ., pp. 58–69.

Molodin V.I. 2012
Pamyatnik Sopka-2 na reke Omi. Vol. 3: Kulturo-khronologicheskiy analiz pogrebalnykh kompleksov odinovskoy kultury. Novosibirsk: Izd. IAET SO RAN.

Molodin V.I. 2014a
The Late Krotovo (Cherno-Ozerye) culture in the Irtysh forest-steppe, Western Siberia. *Archaeology, Ethnology and Anthropology of Eurasia*, No. 1: 49–54.

Molodin V.I. 2014b
Ethnic and cultural mosaic in Western Baraba during the Late Bronze to Iron Age transition (14th–8th centuries BC). *Archaeology, Ethnology and Anthropology of Eurasia*, No. 4: 54–64.

Molodin V.I., Grishin A.E. 2016
Pamyatnik Sopka-2 na reke Omi. Vol. 4: Kulturno-khronologicheskiy analiz pogrebalnykh kompleksov krotovskoy kultury. Novosibirsk: Izd. IAET SO RAN.

Molodin V.I., Grishin A.E. 2018
Pamyatnik Sopka-2 na reke Omi. Vol. 5: Kulturno-khronologicheskiy analiz pogrebalnykh kompleksov pozdnekrotovskoy (chernoozerskoy), andronovskoy (fyodorovskoy), irmenskoy i pakhomovskoy kultur. Novosibirsk: Izd. IAET SO RAN.

Molodin V.I., Hansen S., Myl'nikova L.N., Reinhold S., Nenachov D.A., Nesterova M.S., Durakov I.A., Kobeleva L.S., Nenachova J.N. 2017 (2021)
Der frühneolithische Siedlungskomplex am Unterlauf des Tartas (Südwestsibirisches Tiefland). *Eurasia Antiqua*, No. 23: 27–88.

Molodin V.I., Kobeleva L.S., Mylnikova L.N. 2017
Ranneneoliticheskaya stoyanka Ust-Tartas-1 i yeyo kulturno-khronologicheskaya interpretatsiya. In *Problemy arkheologii, etnografii, antropologii Sibiri i sopredelnykh territoriy*, vol. XXIII. Novosibirsk: Izd. IAET SO RAN, pp. 172–177.

Molodin V.I., Kobeleva L.S., Reinhold S., Nenakhova Y.N., Efremova N.S., Durakov I.A., Mylnikova L.N., Nesterova M.S. 2018
Stratigrafiya pogrebalnykh kompleksov ranney – razvitoy bronzy na pamyatnike Ust-Tartas-2. In *Problemy arkheologii, etnografii, antropologii Sibiri i sopredelnykh territoriy*, vol. XXIV. Novosibirsk: Izd. IAET SO RAN, pp. 293–298.

Molodin V.I., Kobeleva L.S., Reinhold S., Nesterova M.S., Selin D.V., Hansen S., Eger Y., Bobin D.N. 2021
Poselencheskiy kompleks andronovskoy (fedorovskoy) kultury v urochishche Tai (Barabinskaya lesostep). In *Problemy arkheologii, etnografii, antropologii Sibiri i sopredelnykh territoriy*, vol. XXVII. Novosibirsk: Izd. IAET SO RAN, pp. 535–541.

Molodin V.I., Mylnikova L.N., Nesterova M.S. 2016
The Vengerovo-2A Neolithic cemetery, southwestern Siberia: Results of a multidisciplinary study. *Archaeology, Ethnology and Anthropology of Eurasia*, vol. 44 (2): 20–46.

Molodin V.I., Mylnikova L.N., Nesterova M.S., Kobeleva L.S., Selin D.V. 2022
An Early Neolithic sanctuary in the eastern Irtysh basin. *Archaeology, Ethnology and Anthropology of Eurasia*, vol. 50 (2): 13–27.

Molodin V.I., Mylnikova L.N., Novikova O.I., Durakov I.A., Kobeleva L.S., Efremova N.S., Solovyev A.I. 2011
Periodization of Bronze Age cultures in the Ob–Irtysh forest-steppe: The stratigraphic position of Early and Middle Bronze Age burials at Tartas-1. *Archaeology, Ethnology and Anthropology of Eurasia*, No. 3: 40–56.

Molodin V.I., Mylnikova L.N., Selin D.V., Neskorov A.V. 2016
Andronovskiy (fedorovskiy) kompleks na pamyatnike Stariy Sad (Barabinskaya lesostep). *Vestnik Novosibirskogo gosudarstvennogo universiteta*. Ser.: Istoriya, filologiya, vol. 15 (3): 63–86.

Molodin V.I., Nenakhov D.A., Mylnikova L.N., Reinhold S., Parkhomchuk E.V., Kalinkin P.N., Parkhomchuk V.V., Rastigeev S.D. 2019
The Early Neolithic complex on the Tartas-1 site: Results of the AMS radiocarbon dating. *Archaeology, Ethnology and Anthropology of Eurasia*, vol. 47 (1): 15–22.

Molodin V.I., Novikov A.V., Zhemerikin R.V. 2002
Staryi Tartas-4 burial ground: New data on the Andronovo culture. *Archaeology, Ethnology and Anthropology of Eurasia*, No. 3: 48–62.

Molodin V.I., Pilipenko A.S., Chikisheva T.A., Romashchenko A.G., Zhuravlev A.A., Pozdnyakov D.V., Trapezov R.O. 2013
Multidistsiplinarniye issledovaniya naseleniya Barabinskoy lesostepi V–I tys. do n.e.: Arkheologicheskiy, paleogeneticheskiy i antropologicheskiy aspekty. Novosibirsk: Izd. SO RAN.

Molodin V.I., Reinhold S., Mylnikova L.N., Nenakhov D.A., Hansen S. 2018
Radiouglerodniye daty neoliticheskogo kompleksa pamyatnika Tartas-1 (ranniy neolit v Barabe). *Vestnik Novosibirskogo gosudarstvennogo universiteta*. Ser.: Istoriya, filologiya, vol. 17. No. 3: Arkheologiya i etnografiya: 39–56.

Mylnikova L.N. 2015
Keramika perekhodnogo vremeni ot bronzovogo k zheleznomu veku lesostepnoy zony Zapadnoy Sibiri: Dialog Kultur. D. Sc. (History) Dissertation. Novosibirsk.

Okladnikov A.P. 1950
Neolit i bronzoviy vek Pribaikalya, pt. 1, 2. Moscow, Leningrad: Izd. AN SSSR. (MIA; No. 18).

Okladnikov A.P., Grigorenko B.G., Alekseyeva E.V., Volkov I.A. 1971
Stoyanka verkhnepaleoliticheskogo cheloveka Volchya Griva (raskopki 1986 goda). In *Materialy polevykh issledovaniy Dalnevostochnoy arkheologicheskoy ekspeditsii*, iss. 2. Novosibirsk: IIFF SO AN SSSR, pp. 87–131.

Okladnikov A.P., Molodin V.I. 1983
Paleolit Baraby. In *Paleolit Sibiri*. Novosibirsk: Nauka, pp. 101–106.

Ossovsky G.O. 1896
Otchet o raskopkakh, proizvedennykh v Tomskoy gubernii. In *Otchety arkheologicheskoy komissii za 1894 g*. St. Petersburg: pp. 139–147.

Parzinger G., Molodin V.I., Novikova O.I., Nagler A., Chemyakina M.A., Garkusha Y.N., Grishin A.E., Efremova N.S. 1999
Perviye raskopki na gorodishche Chicha. In *Problemy arkheologii, etnografii, antropologii Sibiri i sopredelnykh*

territoriy, vol. V. Novosibirsk: Izd. IIFF SO RAN, pp. 487–490.

Polosmak N.V., Chikisheva T.A., Balueva T.S. 1989

Neoliticheskiye mogilniki Severnoy Baraby. Novosibirsk: Nauka.

Schneeweis J., Becker F., Molodin V.I., Parzinger H., Marchenko Z.V., Svyatko S.V. 2018

Radiouglerodnaya khronologiya protsessa zaseleniya pamyatnika Chicha i bayesovskaya statistika dlya otsenki preryvistogo perekhoda ot epokhi pozdney bronzy k rannemu zheleznomu veku (Zapadnaya Sibir). *Geologiya i geofizika*, vol. 59 (6): 792–813.

Talitskaya I.A. 1953

Materialy k arkheologicheskoy karte Nizhnego i Srednego Priobya. Moscow: Izd. AN SSSR, pp. 333–337. (MIA; No. 35).

Troitskaya T.N. 1966

Drevnyaya istoriya plemen Verkhnego Priobya po materialam Novosibirskoy arkheologicheskoy ekspeditsii. In *Tezisy dokl. X nauchnoy konf., posvyashch. 25-letiyu Novosib. gos. ped. inst*. Novosibirsk: Izd. Novosib. Gos. Ped. Inst., pp. 30–31.

Troitskaya T.N., Molodin V.I., Sobolev V.I. 1980

Arkheologicheskaya karta Novosibirskoy oblasti. Novosibirsk: Nauka.

Vostochniy variant pakhomovskoy kultury v Tsentralnoy Barabe. 2017

V.I. Molodin, L.N. Mylnikova, S.V. Selin, A.V. Neskorov. Novosibirsk: Izd. IAET SO RAN.

Yadrintsev N.M. 1883

Opisaniye sibirskikh kurganov i drevnostey. Puteshestviye po Zapadnoy Sibiri i Altayu v 1870 i 1880 gg. In *Trudy Mosk. arkheol. ob-va*, iss. II/III. Moscow: pp. 186–187.

Yurakova A.Y. 2017

Neolit Barabinskoy lesostepi i yuzhno-tayozhnogo Priirtyshya. Cand. Sc. (History) Dissertation. Kemerovo.

Received October 20, 2022.