Chapter 9
From the Time of Tsar Peter the Great to Modern Russia: The Development of Physical Anthropology and Bioarchaeology

Vyacheslav Moiseyev, Alexandra Buzhilova, and Eileen M. Murphy

Introduction

The study of human skeletal remains in Russia had its genesis in the late seventeenth century during the reign of Tsar Peter the Great who was instrumental in the foundation of the Kunstkamera Museum and the Russian Academy of Sciences in Saint Petersburg. During the nineteenth century, physical anthropology was recognised as a discipline in its own right as a result of the efforts of scientists working in both Saint Petersburg and Moscow, thereby paving the way for the modern structures within which the discipline still operates today. In this paper we review the birth of physical anthropology in Russia, assess the impact of the Soviet era on its activities and examine the changes that have arisen in more recent post-Communism times.

V. Moiseyev
Department of Physical Anthropology, Peter the Great Museum of Anthropology and Ethnography (Kunstkamera), Russian Academy of Sciences, Saint Petersburg, Russia

A. Buzhilova
Research Institute and Museum of Anthropology, Moscow State University/Institute of Archaeology, Russian Academy of Sciences, Moscow, Russia

E. M. Murphy (✉)
Archaeology and Palaeoecology, School of Natural and Built Environment, Queen's University Belfast, Belfast, Northern Ireland
e-mail: eileen.murphy@qub.ac.uk

B. O'Donnabhain, M. C. Lozada (eds.), *Archaeological Human Remains*,
https://doi.org/10.1007/978-3-319-89984-8_9

The Development of Physical Anthropology in Russia

The development of physical anthropology in Russia is primarily related to the reign of Tsar Peter the Great (1672–1725), a polymath with a hunger for knowledge, whose social position enabled him to gain first-hand experience of a range of scientific pursuits, including anatomy and dentistry. He undertook his 'Great Embassy' in the years 1697 and 1698 when he travelled throughout Western Europe and had the opportunity to view the private cabinets and collections of other royal families, scholars and wealthy trading merchants. It is thought that this period of travel inspired his plans for the development of science and education in Russia (Radzuin and Chistov 2012: 3). During these travels, Peter began collecting zoological and anatomical collections as well as various scientific implements which formed the basis of the 'Tsar's Cabinet'. In 1714, the collections were moved from Moscow to Saint Petersburg and were placed in the Summer Palace, thereby forming the foundation for the Kunstkamera Museum, the first museum in Russia. The collections were later augmented by the purchase in Amsterdam of Albert Seba's (1665–1736) zoological collection and the herbarium and anatomical collection of leading anatomist, Frederik Ruysch (1638–1731).

In 1718, work commenced (1718–1727) on the construction of the current Kunstkamera building on Vasilievsky Island in the centre of the new capital; this saw the unification of Peter's library and collections, an anatomical theatre, an observatory and the famous Gottorp Globe under one roof. It was also the location for the meetings of the Academy of Sciences, established at the behest of the Tsar in 1724 (Radzuin and Chistov 2012: 29). Even after the death of the Tsar in 1725, the archaeological, ethnological and anthropological collections of the Kunstkamera continued to be enlarged, and two volumes of *A Catalog of the Collections of the Kunstkamera (Musei Imperialis Petropolitani)* were published during the 1740s (Gokhman 1980).

In 1718, the Tsar issued several decrees that ordered the acquisition of materials that could be included within the museum's collections. Payment was provided for 'newborn freaks' and antiquities, including 'unusual stones, human and animal bones, old inscriptions on stones, iron or copper, old weapons, pottery – whatever is very old or unusual' (Chistov et al. 2004: 8). To realise his ambitious projects, the Tsar recruited a number of European specialists, and the first expedition, which started in 1719 and lasted for 8 years, was led by Daniel Gottlieb Messerschmidt who was a specialist in both medicine and botany (Novlyanskaya 1970). In Tobolsk, which at that time was declared by the Tsar to be the official capital of Siberia, Messerschmidt met a Swedish lieutenant colonel of German origin, Philip Johan von Strahlenberg, who had been taken prisoner at the Battle of Poltava and had lived in exile in Tobolsk for 13 years. Strahlenberg accompanied Messerschmidt on several expeditions to Siberia and later published some of Messerschmidt's and his own observations (Strahlenberg 1736). Messerschmidt's expedition collected unique information concerning not only the geography, geology, flora and fauna of Siberia but also information on the linguistics and history of native Siberian

populations. He and Strahlenberg were the first researchers to excavate Early Iron Age kurgans in Southern Siberia, for example, and to conclude that European Scythians were closely related to ancient Siberians (Vadetskaya 1986). The tradition of complex scientific expeditions proceeded throughout the 18th century. It is notable that human morphological studies became an important component of these expeditions. The test list compiled by Gerhard Friedrich Müller, a Russian historian of German origin, for the Great Northern Expedition of 1733–1743, for example, included questions relating to height, the shape and colour of the eyes and hair and the shape of the nose amongst others (Miller 1999).

A milestone in the development of physical anthropology occurred in 1805 during the 50th anniversary celebrations of the establishment of the Imperial Moscow University (now Lomonosov Moscow State University), founded on the basis of the efforts of scientist Mikhail V. Lomonosov. Head of the Department of Anatomy, Ivan F. Vensovich, a lecturer in human anatomy, physiology and forensic medicine, presented a report in which he strictly differentiated between the terms anthropology (in the broadest meaning of this term) and physical anthropology. In his view, physical anthropology encompassed studies about humans, including body composition, physical activity as well as morphological and physical changes during periods of ill health. He made the observation that physical anthropology was not a part of medicine, because it had other purposes, including the study of human variability (Levin 1960).

As the 19th century advanced, the study of physical anthropology gained momentum. Working in the Imperial Moscow University, Alexei L. Lovetsky (1835) published the university textbook *Synopsis on Physiology or Anthro-Biology*, followed in 1838 by the first anthropological manual in Russia *Guidebook to Knowledge of the Tribes of Mankind* (Chtetcov 2004). It is Karl Ernst von Baer, however, who is usually accredited as having been one of the founders of both Russian and European anthropology (Chistov et al. 2004: 8) since his work resulted in the start of the practice of the regular collection of osteological specimens for scientific purposes in Russia. He graduated from the medical faculty of Derpt University (today Tartu University, Estonia) in 1814 and proceeded to spend time in Austria and Germany where he studied natural sciences and left his medical career behind (Buzhilova 2011: 364). After moving to Saint Petersburg in 1834, he became a member of the Saint Petersburg Academy of Sciences and Head of the Anatomical Chamber of the Kunstkamera Museum in 1842. During this period he accumulated and studied human crania, publishing the first study in physical anthropology in 1845 in which he compared the skulls of several Siberian populations (von Baer 1845). He interested other Academy members in physical anthropology, and his connections with Russian archaeologists and ethnographers led to the acquisition of crania from around the country; by 1858 the Kunstkamera curated as many as 350 crania. Von Baer was one of a number of Russian scientists who believed in the concept of evolution prior to the publication of Darwin's (1859) *On the Origin of Species*. He disagreed with Darwin's theory, however, and believed that 'the natural purposiveness of life resulted in favourable variations' (Graham 1993: 66). In 1878, the name of the anatomy department was changed

to its current one: the Department of Physical Anthropology (Levin 1960; Gokhman 1980; Chistov et al. 2004: 94, 102).

Meanwhile in Moscow, the Society of Enthusiasts of Natural Sciences was founded in the University in 1863 and, in the following year, was redesignated as the Anthropological Department because of the initiatives of Anatole P. Bogdanov (Kozintsev 1997a: 195). One of the key roles of the society was to collect archaeological, anthropological and ethnological materials, and this involved participation of its members in expeditions throughout Eurasia (Buzhilova 2011: 364–365). Bogdanov continued to spearhead the subject's development in Moscow, and he was instrumental in the foundation of the sub-Faculty of Anthropology in the Imperial Moscow University in 1876. Bogdanov and fellow scholar, Dmitrii N. Anuchin, were involved in the Russian section of the Anthropological Exhibition in Paris in 1878, at which the most significant discoveries from both archaeological and ethnographical expeditions were presented. This led the two men to organise the Anthropological Exhibition in Moscow the following year. This popular exhibition was located in the heart of the city near the Kremlin for 6 months, and it paved the way for the opening of the Anthropological Museum at the Imperial Moscow University in 1883 (Buzhilova 2011: 366; Fig. 9.1). Anuchin, in contrast to most early Russian physical anthropologists who focused mainly on cranial studies, paid more attention to the analysis of living people (Kozintsev 1997b: 95–96). This branch of physical anthropology is usually referred to as somatology, and it became very popular in Russia and flourished throughout most of the 20th century.

To end this short review of the early stages of development of physical anthropology in Russia, we cannot escape discussion of the theoretical background of most pre-World War II population studies, namely, the concept of 'race'. Correct understanding of this issue will not only contextualise the history of pre-Soviet Russian anthropology but will explain certain aspects of the Soviet and post-Soviet periods. At the present time, many modern physical anthropologists and specialists in adjacent areas believe that the concept of race was not only scientifically misleading but also a construct of the social order of 19th-century colonial empires that should therefore be completely abandoned. The authors of this paper have never witnessed accusations in the media of modern Russian anthropologists as being proponents of the concept of race. The issue was tackled by Mogilner (2013) in her volume – *Homo Imperii: A History of Physical Anthropology in Russia* – in which she argued that the Russian Empire was not a typical colonial empire, a situation that certainly influenced the development of science. This is also true with respect to Russian interpretations of race, which Mogilner refers to as 'liberal race', and can be understood through the words of Dmitrii N. Anuchin who was of the view that 'racial traits do not coincide with tribal and national' characteristics. He was of the view that groups formed historically and culturally did not equate to races and that the only valid scientific approach with respect to the origin of races was one that followed a monogenic theory (Anuchin 1899; Mogilner 2013: 9). Mogilner (2013: 5) is of the view that Russian researchers cannot escape the Imperial social order which needed the concept of race to legitimise the suppression of national movements. The Soviet Union, and later modern Russia, as descendants of the Russian Empire, inevitably inherited this concept of race. In short, race is traditionally

Fig. 9.1 Photograph of the room of the Anthropological Museum of Imperial Moscow University where Anuchin gave lectures to his students. (Photograph taken by Sherer Nabgoltsc and Company, Moscow. Copyright – Archives of the Research Institute and Museum of Anthropology, Moscow State University)

accepted in Russian physical anthropology as a scientific unit of classification, but it was not envisaged by its practitioners that it was a tool that could be used to justify social inequality. This was the general view of the broader global physical anthropological community of that time who attempted to distance themselves from the work of ethnographers and linguists who were attempting to construct 'racial hierarchies', in which the Aryan race was supreme (Mogilner 2013: 7). This perspective is exemplified through the approach of the physical anthropologist Nikolai Miklouho-Maclay (1846–1888), who studied the populations of New Guinea, Melanesia and other Pacific peoples (Fig. 9.2). He was a strong advocate of racial equality which he defended in all of his scientific works; he wrote against both slavery and colonial expansion. He took this to the extreme, and his will stated that his skull was to be exhumed and housed together with the skulls he had collected during his research in the Pacific (Webster 1984). His wishes were fulfilled, and today his skull is stored in the Peter the Great Museum of Anthropology and Ethnography (Kunstkamera). This case is unique, but it is tangible proof that to be a proponent of the concept of race does not equate to racism.

Fig. 9.2 (**a**) Portrait of Nikolai Miklouho-Maclay painted by K. G. Makhovskiy in 1882 (oil on canvas) (Published with the permission of the Peter the Great Museum of Anthropology and Ethnography (Kunstkamera), Russian Academy of Science (collection number 216–1)). (**b**) The skull of Nikolai Miklouho-Maclay alongside those he had collected during his research in the Pacific. These skulls are stored together in the Peter the Great Museum of Anthropology and Ethnography (Kunstkamera) in accordance with the wishes expressed in Miklouho-Maclay's will. (Photograph taken by Vyacheslav Moiseyev)

To our mind the Russian concept of race should not necessarily be viewed as an aberration of the social policy of the Russian Empire but rather as a natural product of its uniqueness. Most parts of the former Russian Empire comprised territories with very sparse populations and harsh climates. Human resources were greatly needed to develop these territories, while mass Russian migration into the regions only happened during the 20th century. The aim of the authorities of the Russian Empire was not to clear lands to enable the settlement of Russian populations, as was the approach of other empires, but rather the integration of native populations into the Empire system no matter how morphologically different they appeared. As a consequence, the newly developed Russian scientific community was not given specific directives in relation to this subject. Russian science from the very beginning was influenced by what was happening in Europe, and it is not at all surprising that it adopted European analytical methods with respect to the study of races. Russian physical anthropologists took the concept of race and developed it in their own way; Imperial social order had only involved the accurate description of numerous native populations, so Russian specialists directed their efforts with respect to race to this purpose. As such, the unification of methods of morphological description became one of the main priorities in Russian physical anthropology, work that was under way when the October Revolution occurred.

The Soviet Period

A consequence of the social revolution of 1917 was a change in relation to the status of historical monuments and museum collections. A decree made by the new Communist government on 13 July 1918 proclaimed that the property of the Russian

Emperor was to be confiscated and then come under the ownership of the Russian Socialist Soviet Federal Republic. A subsequent decree on 5 October 1918 introduced the registration and preservation of the country's collections and historical monuments (Rybak 2005; Buzhilova 2011: 368). This was followed in 1919 by a government decree in Petrograd (now Saint Petersburg) which saw the establishment of the Russian Academy of the History of Material Culture (RAHMC) and had a similar structure to the disbanded Imperial Archaeological Commission, which was the principal archaeological organisation in pre-Soviet Russia. In 1937, the RAHMC joined the Academy of Sciences of the USSR and changed its name to the Institute of Material Culture (IHMC). Eventually, it developed into the Institute of Archaeology of the Russian Academy of Sciences (RAS) in Moscow and the Institute of the History of Material Culture in Leningrad (now Saint Petersburg).

In basic terms, the new Soviet authorities faced the same economic challenges as the former Russian Empire, namely, the underdevelopment of marginal areas of the state as a consequence of low population density in these regions. The situation was exacerbated for Soviet leaders as a consequence of the losses incurred during the civil war, and they adopted a new strategy, one that was based upon the revival of the 'national self-conscious' of even the smallest national groups. As such, the biological egalitarianism which had formed the basis of prerevolution Russian physical anthropology corresponded greatly with the ideas of the new Communist elite. It is therefore not surprising that population studies were central to the Soviet agenda, thereby enabling physical anthropology to flourish during this period.

Up until the collapse of the Soviet Union in the early 1990s, extensive research projects were undertaken by national branches of the Academy of Sciences and involved the study of the population history of the aboriginal peoples living in the vast territories of the USSR. Numerous publications arose from this work that focused on the origins of most populations living in both the European (e.g. Vitov et al. 1959; Abdushelishvili 1964; Bunak 1965; Mark 1970; Alexeeva 1973) and Asian parts of the USSR (e.g. Yarkho 1947; Oshanin and Zezenkova 1953; Levin 1958), including many of the now independent states.

One of the consequences of the realisation of the industrialisation of the Soviet economy was an extensive programme of infrastructure building. Legislation necessitated the archaeological investigation of all construction areas, so large-scale excavations were routinely undertaken in the USSR. This resulted in a notable increase in the number of osteological collections housed in central and local museums around the territory which, in turn, provided excellent opportunities for a variety of morphological studies of the human skeleton. It is no exaggeration to state that craniometrics was the most popular branch of physical anthropology during Soviet times.

The significance of hybridisation in the population processes that occurred in Northern Eurasia was recognised, and one of the prime aims of craniologists of that time was a quest for characteristics that could effectively differentiate between Asian and European populations. A number of unique characteristics were identified in relation to facial flatness (see, e.g. Abider (1960)), most of which are still used by modern Russian physical anthropologists. The intensive collection of crania

from historical populations formed the basis for cranial studies of modern populations that are comparable with current somatological studies (e.g. Debets 1951; Alexeev 1969, 1974; Denisova 1977). The foundation of subsequent palaeoanthropological cranial studies can be found in the book of Georgi F. Debets – *Paleoanthropology of the USSR* – published in 1948. Debets summarised information derived from cranial series dating from the Palaeolithic to Mediaeval times from all territories of the USSR. Later cranial studies have substantiated many of the results of his analyses.

Facial reconstruction is another technique that saw major developments in Soviet times, with Mikhail M. Gerasimov (1907–1970) developing his technique, now referred to as the 'Russian method' throughout the 1920s. The approach viewed the development of the musculature on the skull and neck as being of primary significance. Throughout his long career, Gerasimov undertook numerous reconstructions, including Rhodesian man, Heidelberg man, Peking man and Tsar Ivan the Terrible, as well as numerous forensic cases. He became the director of the Laboratory for Plastic Reconstruction, founded at the Ethnographic Institute of the USSR Academy of Sciences in Moscow in 1950 (Prag and Neave 1997: 17).

One of the most notable trends in world physical anthropology in the aftermath of World War II was the introduction of new systems of recording and identifying morphologic traits and, later, genetic markers which further enhanced the understanding of population history (e.g. Dahlberg 1951; Cummins and Midlo 1961; Berry and Berry 1967). This development also occurred in the Soviet Union where, as had been the case with previous craniometric studies, the traits were utilised for the purposes of investigating population processes in Northern Eurasia. The approach was spearheaded in relation to dentition by Alexander A. Zubov, who developed the approaches used by Western researchers, including Dahlberg, Pedersen and Selmer-Olsen, and proposed his own battery of nonmetric dental traits (Zubov 1968, 1973). His method is still widely used in modern Russian population studies. Similar work has since been undertaken by Genrietta L. Khit (1983) for dermatoglyphics and by Alexander G. Kozintsev (1992) for cranial nonmetric traits.

Interest in palaeopathology in Russia was spearheaded by Dmitrii G. Rokhlin, who founded the Museum of Age and Pathological Osteology of Modern and Ancient Populations in the Department of Roentgen and Radiology of the First Leningrad I. P. Pavlov Medical Institute (now known as the Saint Petersburg State Medical University). Rokhlin had a particular interest in the study of the palaeopathological features of skeletons of known historical individuals, such as Duke Yaroslav I (c. 980–1054) who was thrice Grand Prince of Novgorod and Kiev, but he also undertook analyses of many archaeological populations. His book, *Diseases of Ancient Humans: Human Bones of Various Epochs – Normal and Pathologically Changed* (Rokhlin 1965), remains the only palaeopathological textbook to have been published in Russia to date. Palaeopathology continued to grow as a discipline throughout the 1970s and 1980s, but within Russia this approach was most prominent in Moscow.

Post-Soviet Russia

The dissolution of the Soviet Union in December 1991 could not but impact upon the development of physical anthropology in Russia. The first evident consequence was the disintegration of the broader scientific community into those of the newly formed independent republics. This resulted in a rapid decline of anthropological branches that required permanent verification of observational methods, such as somatology, and today only a few specialists continue to work within this once mighty field of physical anthropology. The political and economic instability that existed in Russia during the 1990s affected physical anthropology along with most other scientific disciples. Decentralisation and a lack of funding for publications led to difficulties regarding the availability of scientific data.

Since the beginning of the 21st century, the situation has improved, and increasing numbers of postgraduate students are specialising in the different branches of physical anthropology. More publications are being produced, and a range of projects are being supported by a variety of national funding organisations. Today the number of regional centres of physical anthropology in Russia is even higher than it was during the Soviet period. At the present time, in addition to Saint Petersburg and Moscow, anthropological research is conducted in a variety of museums and universities throughout Russia, including Barnaul, Ekaterinburg, Kazan, Krasnoyarsk, Novosibirsk, Rostov, Samara, Tomsk, Tumen, Ufa and Volgograd. Most of these centres focus on undertaking research on the numerous collections of skeletal remains that have been excavated in their regions.

One of consequences of the dissolution of the Soviet Union was the inclusion of the new Russia in the process of scientific globalisation, and this has resulted in a number of international multidisciplinary projects. The importance of the territory of Russia for the understanding of ancient migrations in Northern Eurasia, in addition to the substantial quantities of human remains to have been excavated, has resulted in a number of large-scale genetic projects in collaboration with researchers from organisations, including Max Plank Institutes, Harvard University and the Centre of Geogenetics of the University of Copenhagen. Such studies have focused on Palaeolithic humans (Reich et al. 2010; Seguin-Orlando et al. 2014; Sawyer et al. 2015; Fu et al. 2016), the origins of the Indo-Europeans (Allentoft et al. 2015; Haak et al. 2015) as well as studies of particular diseases, such as tuberculosis (Murphy et al. 2009) and plague (Rasmussen et al. 2015).

From the 1990s bioarchaeological studies, with an emphasis on palaeopathology, has been a regular component of paleoanthropological projects in the Institute of Archaeology (RAS) and the Research Institute and Museum of Anthropology in Moscow State University (e.g. Buzhilova 1992; Kozlovskaya 1996; Mednikova 1999, 2001; Buzhilova and Berezina 2008; Dobrovolskaya and Mednikova 2011; Gresky et al. 2016). A number of anthropological departments in other parts of Russia now employ palaeopathologists (see, e.g. Pererva, 2005, 2012; Aristova et al. 2006; Kufterin and Dubova 2013; Chikisheva et al. 2014; Tur 2014; Borutskaya et al. 2015; Tur et al. 2016). Biocultural studies have also been undertaken by non-Russian scholars on collections from throughout Russia (e.g. Loyer et al. 2013; Murphy 2003,

2008; Murphy and Khokhlov 2016; Murphy et al. 2002). Palaeodietary analyses based both on the analysis of dental palaeopathology and carbon and nitrogen stable isotopes have also provided major new insights, particularly in relation to the diet of ancient hunter-gatherers and pastoral nomads (Dobrovolskaya 2005; Dobrovolskaya and Tiunov 2013; Murphy et al. 2013; Svyatko et al. 2013; Buzhilova 2016).

A number of substantial multidisciplinary projects have demonstrated the huge potential to be gained in relation to major archaeological questions through the inclusion of bioarchaeological analyses of human remains. Notable examples from recent years include the Social Sciences and Humanities Research Council of Canada funded 'Baikal-Hokkaido Archaeology Project' on hunter-gatherer populations of the Cis-Baikal region of Siberia led by Andrzej Weber of the University of Alberta, Canada (Weber et al. 2008), and the National Science Foundation funded 'Samara Valley Project' that focused on the Bronze Age societies of the region and was led by David Anthony, Dorcas Brown, Alexander Khokhlov, Pavel Kuznetsov and Oleg Mochalov (Anthony et al. 2016).

Conclusions

The development of physical anthropology in Russia has had a colourful history since the days of Tsar Peter the Great through the Soviet era to modern Russia. During this time Russian physical anthropologists have been at the forefront of many methodological advances. Bioarchaeology is continuing to develop as a field, and increasing numbers of palaeopathologists trained in Moscow are now working in laboratories throughout the territory. The important contribution the analysis of archaeological human skeletal remains from Russia can make to the understanding of broader global issues, such as the spread of early humans and languages, has been recognised through their inclusion in recent major genetic projects. The past people of Russia will undoubtedly continue to play a central role in scientific debates long into the future.

Acknowledgements We are grateful to Maria V. Khartanovich, Peter the Great Museum of Anthropology and Ethnography (Kunstkamera) and Russian Academy of Science, for arranging the necessary copyright permissions for Fig. 9.2a. Thanks are also due to Libby Mulqueeny, School of Natural and Built Environment, Queen's University Belfast, for her assistance with Fig. 9.2.

References

Abdushelishvili, M.G. 1964. *Anthropology of the Ancient and Modern Populations of Georgia*. Tbilisi: Mecniereba Press. (In Russian).

Abider, N.A. 1960. *Transversal Flatness of the Cranial Face* (Trudy Instituta Etnografii Akademii Nauk SSSR (Novaya seriya) 50). Moscow/Leningrad: Academy of Science of the USSR (In Russian).

Alexeev, V.P. 1969. *The Origins of the Peoples of Eastern Europe: Cranial Study*. Moscow: Nauka. (In Russian).

———. 1974. *The Origin of the People of Caucasus: Cranial Study*. Moscow: Nauka. (In Russian).

Alexeeva, T.I. 1973. *Orthogenesis of Eastern Slavic Populations according to Anthropological Data*. Moscow: Nauka. (In Russian).

Allentoft, M.E., M. Sikora, K.G. Sjögren, S. Rasmussen, M. Rasmussen, J. Stenderup, P.B. Damgaard, H. Schroeder, T. Ahlström, L. Vinner, A.S. Malaspinas, A. Margaryan, T. Higham, D. Chivall, N. Lynnerup, L. Harvig, J. Baron, P. Della Casa, P. Dąbrowski, P.R. Duffy, A.V. Ebel, A. Epimakhov, K. Frei, M. Furmanek, T. Gralak, A. Gromov, S. Gronkiewicz, G. Grupe, T. Hajdu, R. Jarysz, V. Khartanovich, A. Khokhlov, V. Kiss, J. Kolář, A. Kriiska, I. Lasak, C. Longhi, G. McGlynn, A. Merkevicius, I. Merkyte, M. Metspalu, R. Mkrtchyan, V. Moiseyev, L. Paja, G. Pálfi, D. Pokutta, Ł. Pospieszny, T.D. Price, L. Saag, M. Sablin, N. Shishlina, V. Smrčka, V.I. Soenov, V. Szeverényi, G. Tóth, S.V. Trifanova, L. Varul, M. Vicze, L. Yepiskoposyan, V. Zhitenev, L. Orlando, T. Sicheritz-Pontén, S. Brunak, R. Nielsen, K. Kristiansen, and E. Willerslev. 2015. Population genomics of Bronze Age Eurasia. *Nature* 522: 167–172.

Anthony, D., D. Brown, A. Khokhlov, P. Kuznetsov, and O. Mochalov, eds. 2016. *The Samara Valley Project: A Bronze Age Landscape in the Russian Steppes (American School of Prehistoric Research)*. Boston: Harvard University Press.

Anuchin, D. 1899. Race. In *Entsiklopedicheskii Slovar*, ed. F.A. Brokgauz and I.E. Efronpp, vol. 26, 356–360. Saint Petersburg: Nauka. (In Russian).

Aristova, E.S., T.A. Chikisheva, A.M. Seidman, A.N. Mashak, and Y.A. Khoroshevskaya. 2006. Pituitary Dwarfism in an early Bronze age individual from Tuva. *Archaeology, Ethnology & Anthropology of Eurasia* 27: 139–147.

Berry, A.C., and R.J. Berry. 1967. Epigenetic Variation in the Human Cranium. *Journal of Anatomy* 101: 361–379.

Borutskaya, S.B., S.V. Vasilyev, and V.A. Yemialyanchyk. 2015. The population of Polotsk in the 17-18th centuries according to anthropological data. *International Journal of Anthropology* 30: 27–42.

Bunak, V.V. 1965. *Origins and Ethnic History of the Russians According to Anthropological Data*. Moscow: Nauka. (In Russian).

Buzhilova, A.P. 1992. Studying physiological stress in ancient population by the methods of palaeopathology. In *Ecological Aspects of Palaeoanthropological and Archaeological Reconstructions*, ed. V.P. Alexeev and V.N. Fedosova, 78–104. Moscow: Institute of Archaeology. (In Russian).

———. 2011. Russia. In *The Routledge Handbook of Archaeological Human Remains and Legislation*, ed. N. Márquez-Grant and L. Fibiger, 363–372. London: Routledge.

———. 2016. A reconstruction of the lifestyle of early humans by natural-science methods. *Herald of the Russian Academy of Sciences 86*: 297–304.

Buzhilova, A.P., and N.Y. Berezina. 2008. A possible case of multiple Myeloma in a skeleton of early medieval age from Northern Caucasus. In *Opus: Interdisciplinary Investigations in Archaeology 6*, ed. A. Buzhilova, 343–351. Moscow: Paralleli. (In Russian with English summary).

Chikisheva, T.A., A.V. Zubova, A.L. Krivoshapkin, V.P. Kurbatov, P.V. Volkov, and A.T. Titov. 2014. Trepanation among the early Nomads of Gorny Altai: A multidisciplinary study. *Archaeology, Ethnology & Anthropology of Eurasia* 42: 130–141.

Chistov, Y.K., E.A. Rezvan, Y.A. Kupina, and E.A. Mikhailova. 2004. *Kunstkamera Museum 290 Years: Peter the Great Museum of Anthropology and Ethnography (Kunstkamera), Russian Academy of Sciences: History, Collections, Research*. Saint Petersburg: RAS MAE.

Chtetcov, V.T. 2004. *The Cradle of Russian Anthropology*. Moscow: Moscow University Press. (In Russian).

Cummins, H., and C. Midlo. 1961. *Finger Prints, Palms and Soles: An Introduction to Dermatoglyphics*. New York: Dover Publications.

Dahlberg, A.A. 1951. The dentition of the American Indian. In *The Physical Anthropology of the American Indian*, ed. W.S. Laughlin, 138–176. New York: The Viking Fund.

Darwin, C.R. 1859. *On the Origin of Species*. London: John Murray.

Debets, G.F. 1948. *Paleo-anthropology of the USSR* (Trudy Instituta Etnografii Akademii Nauk SSSR (Novaya seriya) 4). Moscow, Leningrad: Academy of Science of the USSR (In Russian).

———. 1951. *Anthropological Research in the Kamchatka Region. Trudy Severo-Vostochnoy Expedicii*. Moscow, Leningrad: Academy of Science of the USSR. (In Russian).

Denisova, R.Y. 1977. *Origins of Letts (According to Cranial Data)*. Riga: Zinatne.

Dobrovolskaya, M. 2005. Upper palaeolithic and late stone age human diet. *Journal of Physiological Anthropology and Applied Human Science* 24: 433–438.

Dobrovolskaya, M.V., and M.B. Mednikova. 2011. 'Copper people' of the Bronze Age: The reconstruction of their health and social status. *Archaeology, Ethnology & Anthropology of Eurasia* 39: 143–156.

Dobrovolskaya, M.V., and A.V. Tiunov. 2013. The Neanderthals of Okladnikov Cave, Altai: Environment and diet based on isotopic analysis. *Archaeology, Ethnology & Anthropology of Eurasia* 41: 78–88.

Fu, Q., C. Posth, M. Hajdinjak, M. Petr, S. Mallick, D. Fernandes, A. Furtwängler, W. Haak, M. Meyer, A. Mittnik, B. Nickel, A. Peltzer, N. Rohland, V. Slon, S. Talamo, I. Lazaridis, M. Lipson, I. Mathieson, S. Schiffels, P. Skoglund, A.P. Derevianko, N. Drozdov, V. Slavinsky, A. Tsybankov, R. Grifoni Cremonesi, F. Mallegni, B. Gély, E. Vacca, M.R. González Morales, L.G. Straus, C. Neugebauer-Maresch, M. Teschler-Nicola, S. Constantin, O. Teodora Moldovan, S. Benazzi, M. Peresani, D. Coppola, M. Lari, S. Ricci, A. Ronchitelli, F. Valentin, C. Thevenet, K. Wehrberger, D. Grigorescu, H. Rougier, I. Crevecoeur, D. Flas, P. Semal, M.A. Mannino, C. Cupillard, H. Bocherens, N.J. Conard, K. Harvati, V. Moiseyev, D.G. Drucker, J. Svoboda, M.P. Richards, D. Caramelli, R. Pinhasi, J. Kelso, N. Patterson, J. Krause, S. Pääbo, and D. Reich. 2016. The genetic history of Ice Age Europe. *Nature* 534: 200–205.

Gokhman, I.I. 1980. *Craniological Collections of the Museum of Anthropology and Ethnology and Their Importance to Anthropological Study*. Leningrad: Museum of Anthropology and Ethnology. (In Russian).

Graham, L.R. 1993. *Science in Russia and the Soviet Union: A Short History*. Cambridge: Cambridge University Press.

Gresky, J., E. Batieva, A. Kitova, A. Kalmykov, A. Belinskiy, S. Reinhold, and N. Berezina. 2016. New cases of trepanations from the 5th to 3rd Millennia BC in Southern Russia in the context of previous research: Possible evidence for a ritually motivated tradition of cranial surgery? *American Journal of Physical Anthropology* 160: 665–682.

Haak, W., I. Lazaridis, N. Patterson, N. Rohland, S. Mallick, B. Llamas, G. Brandt, S. Nordenfelt, E. Harney, K. Stewardson, Q. Fu, A. Mittnik, E. Bánffy, C. Economou, M. Francken, S. Friederich, R. Garrido Pena, F. Hallgren, V. Khartanovich, A. Khokhlov, M. Kunst, P. Kuznetsov, H. Meller, O. Mochalov, V. Moiseyev, N. Nicklisch, S.L. Pichler, R. Risch, M.A. Rojo Guerra, C. Roth, A. Szécsényi-Nagy, J. Wahl, M. Meyer, J. Krause, D. Brown, D. Anthony, A. Cooper, K. Werner Alt, and D. Reich. 2015. Massive migration from the steppe was a source for Indo-European Languages in Europe. *Nature* 522: 207–211.

Khit, G.L. 1983. *Deramatogliphics of the People of the USSR*. Moscow: Nauka.

Kozintsev, A.G. 1992. Ethnic epigenetics: A new approach. *Homo* 43: 213–244.

———. 1997a. Bogdanov, Anatoly Petrovich (1834-1896). In *History of Physical Anthropology: An Encyclopedia*, ed. F. Spencer, vol. 1, 195. London: Garland Publishing.

———. 1997b. Anuchin, Dmitrii Nikolaevich (1843-1923). In *History of Physical Anthropology: An Encyclopedia*, ed. F. Spencer, vol. 1, 95–96. London: Garland Publishing.

Kozlovskaya, M.V. 1996. *Ecology of the Ancient Forest Tribes of Eastern Europe*. Moscow: Institute of Archaeology. (In Russian with English summary).

Kufterin, V., and N. Dubova. 2013. A preliminary analysis of late bronze age human skeletal remains from Gonur-depe, Turkmenistan. *Bioarchaeology of the Near East* 7: 33–46.

Levin, M.G. 1958. *Ethnical Anthropology and Problems of Origins of the Far East Peoples*. Moscow: Academy of Science of the USSR. (In Russian).

———. 1960. *Issues About the History of Anthropology in Russia*. Moscow: Academy of Sciences of the USSR. (In Russian).
Lovetsky, A.L. 1835. *Synopsis on Physiology or Anthropo-Biology*. Moscow: University Press.
———. 1838. *Guidebook to Knowledge of the Tribes of Mankind*. Moscow: University Press.
Loyer, J., A. Tairov, S. Rottier, and P. Courtaud. 2013. Bioarchaeology and burial rituals of the Iron Age Nomads from South Ural: First results of the study of the Kurgan 4 from Kichigino 1 Cemetery (Russia). In *Etnicheskyi Vzaimodeictviya na Iujnom Urale*, ed. A.D. Tairov and N.O. Ivanova, 157–166. Chelyabinsk: Nauk.
Mark, K. 1970. *On the Origin of Finno-Ugric Peoples from the Viewpoint of Anthropology*. Tallinn: Eesti Raamat. (In German).
Mednikova, M.B. 1999. Die menschlichen Skelettreste aus den Wirtschaft sgruben der antiken Siedlung Myschako. *Eurasia Antiqua* 5: 470–474.
Mednikova, M. 2001. *Trepanations Among Ancient Peoples of Eurasia*. Moscow: Scientific World. (In Russian with English summary).
Miller, G.F. 1999. *History of Siberia*. Vol. 1. Moscow: Vostochnaya Literature RAS. (In Russian).
Mogilner, M. 2013. *Homo Imperii: A History of Physical Anthropology in Russia*. London: University of Nebraska Press.
Murphy, E.M. 2003. *Iron Age Archaeology and Trauma from Aymyrlyg, South Siberia* (BAR International Series 1152). Oxford: Archaeopress.
———. 2008. A biocultural study of children from Iron Age South Siberia. In *Babies Reborn: Infant/Child Burials in Pre- and Proto-history* (BAR International Series 1832), ed. K. Bacvarov, 175–187. Oxford: Archaeopress.
Murphy, E.M., and A. Khokhlov. 2016. Biocultural analysis of the prehistoric populations of the Volga Region. In *The Samara Valley Project: A Bronze Age Landscape in the Russian Steppes* (American School of Prehistoric Research), ed. D. Anthony, D. Brown, A. Khokhlov, P. Kuznetsov, and O. Mochalov, 147–214. Boston: Harvard University Press.
Murphy, E.M., I.I. Gokhman, Y.K. Chistov, and L.L. Barkova. 2002. A review of the evidence for old world scalping: New cases from the Cemetery of Aymyrlyg, South Siberia. *American Journal of Archaeology* 106: 1–10.
Murphy, E.M., Y.K. Chistov, R. Hopkins, P. Rutland, and G.M. Taylor. 2009. Tuberculosis among Iron Age individuals from Tyva, South Siberia: Palaeopathological and biomolecular findings. *Journal of Archaeological Science* 36: 2029–2038.
Murphy, E.M., R.J. Schulting, N. Beer, Y. Chistov, A. Kasparov, and M. Pshenitsyna. 2013. Iron Age pastoral nomadism and agriculture in the Eastern Eurasian Steppe: Implications from dental palaeopathology and stable carbon and nitrogen isotopes. *Journal of Archaeological Science* 40: 2547–2560.
Novlyanskaya, M.G. 1970. *Daniel Gottlieb Messerschmidt and his Siberian Research*. Leningrad: Nauka. (In Russian).
Oshanin, L.V., and V.Y. Zezenkova. 1953. *Problems of the Origins of the Peoples of Central Asia According to Anthropological Data*. Tashkent: Academy of Science of the Uzbec USSR. (In Russian).
Pererva, E. 2005. About a tradition to remove a scalp in the Sarmatians (from materials from the burial ground of Novyi). *Rossiskaya Arkheologia* 3: 36–44. (In Russian).
———. 2012. A case of trepanation in the Sarmatian Group (based on anthropological material from the Pereguznoe I Burial Ground). *Seriya Antropologia* 23: 123–133. (In Russian).
Prag, J., and R. Neave. 1997. *Making Faces: Using Forensic and Archaeological Evidence*. London: British Museum Press.
Radzuin, A., and Y. Chistov. 2012. *The First Scientific Collections of Kunstkamera: Exhibition Guide*. Saint Petersburg: Russian Academy of Science.
Rasmussen, S., M.E. Allentoft, K. Nielsen, L. Orlando, M. Sikora, K.-G. Sjögren, A. Gorm Pedersen, M. Schubert, A. Van Dam, C.M. Outzen Kapel, H.B. Nielsen, S. Brunak, P. Avetisyan, A. Epimakhov, M.V. Khalyapin, A. Gnuni, A. Kriiska, I. Lasak, M. Metspalu, V. Moiseyev, A. Gromov, D. Pokutta, L. Saag, L. Varul, L. Yepiskoposyan, T. Sicheritz-Pontén, R.A. Foley,

M. Mirazón Lahr, R. Nielsen, K. Kristiansen, and E. Willerslev. 2015. Early divergent strains of *Yersinia pestis* in Eurasia 5,000 years ago. *Cell* 163: 571–582.

Reich, D., R.E. Green, M. Kircher, J. Krause, N. Patterson, E.Y. Durand, B. Viola, A.W. Briggs, U. Stenzel, P.L.F. Johnson, T. Maricic, J.M. Good, T. Marques-Bonet, C. Alkan, Q. Fu, S. Mallick, H. Li, M. Meyer, E.E. Eichler, M. Stoneking, M. Richards, S. Talamo, M.V. Shunkov, A.P. Derevianko, J.-J. Hublin, J. Kelso, M. Slatkin, and S. Pääbo. 2010. Genetic history of an Archaic Hominin Group from Denisova Cave in Siberia. *Nature* 468: 1053–1060.

Rokhlin, D.G. 1965. *Diseases of Ancient Humans: Human Bones of Various Epochs – Normal and Pathologically Changed*. Moscow/Leningrad: Nauka. (In Russian with English summary).

Rybak, K.E. 2005. *The Museum Law (International and Legal Aspects)*. Moscow: Yurist. (In Russian).

Sawyer, S., G. Renauda, B. Viola, J.-J. Hublin, M.-T. Gansauge, M.V. Shunkov, A.P. Derevianko, K. Prüfer, J. Kelso, and S. Pääbo. 2015. Nuclear and mitochondrial DNA sequences from two Denisovan individuals. *Proceedings of the National Academy of Sciences of the United States of America* 112: 15696–15700.

Seguin-Orlando, A., T.S. Korneliussen, M. Sikora, A.S. Malaspinas, A. Manica, I. Moltke, A. Albrechtsen, A. Ko, A. Margaryan, V. Moiseyev, T. Goebel, M. Westaway, D. Lambert, V. Khartanovich, J.D. Wall, P.R. Nigst, R.A. Foley, M.M. Lahr, R. Nielsen, L. Orlando, and E. Willerslev. 2014. Genomic structure in Europeans dating back at least 36,200 years. *Science* 346: 1113–1118.

Svyatko, S.V., R.J. Schulting, J.P. Mallory, E.M. Murphy, P.J. Reimer, V.I. Khartanovich, Y.K. Chistov, and M.V. Sablin. 2013. Stable isotope dietary analysis of prehistoric populations from the Minusinsk Basin, Southern Siberia, Russia: A new chronological framework for the introduction of millet to the Eastern Eurasian Steppe. *Journal of Archaeological Science* 40: 3936–3945.

Tur, S.S. 2014. Bilateral asymmetry of long bones in Bronze and Early Iron Age pastoralists of the Altai. *Archaeology, Ethnology & Anthropology of Eurasia* 42: 141–156.

Tur, S.S., S.V. Svyatko, and A.I. Nechvaloda. 2016. Cleft lip case in a Middle Bronze Age young Man from Altai, Russia. *International Journal of Osteoarchaeology*. https://doi.org/10.1002/oa.2538.

Vadetskaya, E.B. 1986. *Archaeological Monuments of the Middle Enisey Steppe*. Leningrad: Nauka. (In Russian).

Vitov, M.B., K.Y. Mark, and N. Cheboksarov. 1959. *Ethnical Anthropology of the Eastern Baltia: Proceedings of the Baltic Complex Expedition*. Vol. 2. Moscow: Nauka. (In Russian).

Von Baer, K.E. 1845. Vergleichung eines von Herrn Obrist Hofmann mitebrachten Karagassen-Schädel mit den von Herrn Dr. *Ruprecht mitgebrachte Samojedenschädel. Bulletin de la Class Physicomathématique de l'Académie Impériale des Sciences de St. Petersburg* 3: 177–187.

von Strahlenberg, P.J. 1736. *An Histori-Geographical Description of the North and Eastern Part of Europe and Asia*. London: W. Innys and R. Manby.

Weber, A.W., M.A. Katzenberg, and T.G. Schurr, eds. 2008. *Prehistoric Hunter-Gatherers of the Baikal Region, Siberia: Bioarchaeological Studies of Past Lifeways*. Philadelphia: University of Pennsylvania Museum of Archaeology and Anthropology.

Webster, E.M. 1984. *The Moon Man: A Biography of Nikolai Miklouho Maclay*. London: University of California Press.

Yarkho, A.I. 1947. *Altai-Sayan Turkic Populations: Anthropological Review*. Abakan: Khakassian National Press. (In Russian).

Zubov, A.A. 1968. *Odontology: Methods of Anthropological Studies*. Moscow: Nauka. (In Russian).

———. 1973. *Ethnical Odontology*. Moscow: Nauka. (In Russian).