



Ф Г Б У Н  
МУЗЕЙ АНТРОПОЛОГИИ  
И ЭТНОГРАФИИ  
им. ПЕТРА ВЕЛИКОГО  
(КУНСТКАМЕРА) РАН

**Индивидуальные краниометрические данные  
близких к современности групп населения  
Восточной и Северо-Восточной Европы**

*[Электронное издание]*

И.Г. Широбоков, В.Г. Моисеев, А.Г. Козинцев,  
В.И. Хартанович, Ю.К. Чистов, А.В. Громов

**Craniometric Database on Modern Populations  
of Eastern and Northeastern Europe**

*[Electronic publication]*

I. Shirobokov, V. Moiseyev, A. Kozintsev,  
V. Khartanovich, Y. Chistov, A. Gromov

Санкт-Петербург

2017

УДК 572.08

ББК 28.71

Ответственный редактор:

*А.А. Казарницкий*, к.и.н., МАЭ РАН

Рецензенты:

*Н.А. Суворова*, к.и.н., ИЭА РАН

*А.В. Зубова*, к.и.н., МАЭ РАН

*Широбоков И.Г., Моисеев В.Г., Козинцев А.Г., Хартанович В.И., Чистов Ю.К., Громов А.В.*  
Индивидуальные краниометрические данные близких к современности групп населения  
Восточной и Северо-Восточной Европы. Электронное издание / отв. ред. А.А. Казарницкий.  
СПб.: МАЭ РАН, 2017.

*Shirobokov I.G., Moiseyev V.G., Kozintsev A.G., Khartanovich V.I., Chistov Y.K., Gromov A.V.*  
Cranio-metric Database on Modern Populations of Eastern and Northeastern Europe. Electronic  
publication / ed. A.A. Kazarnitsky. Saint Petersburg: MAE RAS, 2017.

ISBN 978-5-88431-337-8

*Настоящее издание является первой публикацией в МАЭ РАН данных индивидуальных измерений разнообразных палеоантропологических материалов, хранящихся в российских музейных и научных центрах, прежде всего – в МАЭ РАН. База данных содержит информацию об измерениях 3139 черепов (2209 мужских и 930 женских), представляющих 16 этнических групп. Материалы происходят из различных районов Восточной и Северо-Восточной Европы, в том числе России, Финляндии, Эстонии, Латвии и Белоруссии. Информация приводится на русском и английском языках. Предназначена для исследователей, занимающихся различными аспектами исторической и физической антропологии, реконструкцией древней истории человечества.*

*This publication opens a series of databases of individual craniometric measurements relating to collections owned by the Museum of Anthropology and Ethnography (Kunstkamera) in Saint-Petersburg and by other institutions of Russia. The present database relates to 3139 recent human crania (2209 male and 930 female) representing 16 ethnic groups. They come from various regions of eastern and northeastern Europe including European Russia, Finland, Estonia, Latvia and Belorussia. The texts are in Russian and in English. The publication is destined for those studying the population history of the respective regions and aspects of cranial morphology.*

## Introduction

Several open-access craniometric databases are available in the Internet. The best known is that by W.W. Howells [1973, 1989, and 1995] (<https://web.utk.edu/~auerbach/HOWL.htm>), which is widely used by craniologists. It spans vast territories of Africa, Western Europe, Southern Asia, Oceania and aboriginal America, whereas European Russia and adjacent territories are underrepresented.

Another well known database is that by P. Brown (<http://peterbrown-palaeoanthropology.net/resource.html>). Apart of cranial measurements, it includes dental, osteometrical, and somatological characteristics of recent Asian and Australian populations as well as data on early humans and chimpanzees. Measurements of several hundred South American crania are presented by A. Ross (<https://sites.google.com/a/ncsu.edu/craniometrics-database/database>).

Several free-access databases on other systems of morphological traits are also available online. They include dental metrics compiled by J.-L. Voisin, S. Condemi, M.H. Wolpoff, and D.W. Frayer (<http://anthropologicaldata.free.fr/webteeth/tablesandbibliography.html>); osteometric data presented by B. Auerbach (<https://web.utk.edu/~auerbach/GOLD.htm>); and cranial nonmetric data by N. Ossenberg (<http://library.queensu.ca/data/cntd>).

Also, a number of online resources relating to high resolution 3D cranial and postcranial models are available online. Access to these data offers opportunities for a wide range of morphological studies comparable to those using original materials. However, the access to these databases is limited.

Here we present a database that includes measurement made by several Russian physical anthropologists, and that will hopefully be useful not only for specialists in population history but also for those who focus on skeletal biology. It will likewise be helpful for those who apply statistical methods for studying admixture. We hope that this publication will be the first in a series relating to various systems of traits.

This database includes measurements of 3139 crania (2209 male and 930 female) representing 17 ethnic groups. The samples, dating to 17<sup>th</sup>–20<sup>th</sup> centuries, mostly to 19<sup>th</sup> century, were collected in European Russia, Finland, Estonia, Latvia and Belorussia. Locations of the largest series are shown on the map (fig. 1). Both modern and obsolete names of sites and regions are used. Most samples from the Russian Federation are owned by Peter the Great Museum of Anthropology and Ethnography (Kunstkamera), Saint-Petersburg. Several collections are housed at other institutions

in Russia, Ukraine and Finland. These include Udmurt and Kazan State Universities, Kirov Military Medical Academy, Odessa National Medical University, Institute of History, Language and Literature of the Ufa Scientific Center of RAS, and Helsinki University. Several series have been reburied.

Measurements follow standard techniques described by V.P. Alexeyev and G.F. Debetz [1964]. Most cranial landmarks and measurements match those described by R. Martin [Martin, Saller, 1957]. Landmarks used for calculating nasomalar and zygomalar angles approximately match those used by W.W. Howells for chords and subtense measurements. The frontomolare anterior landmark used by W.W. Howells does not coincide with frontomolare orbitale used by R. Martin and by Russian craniometrists (Howells regarded NFA as nearly corresponding to M77). Another problematic dimension is upper facial height (M48), rather vaguely defined in Martin's textbook. While Howells used the anterior prosthion as a lower landmark, the Russian practice is to use the lower prosthion (=alveolare), usually situated 2-3 mm below.

Whenever postcrania were available, sex was determined on the basis of pelvic morphology, otherwise cranial criteria were used [Alexeyev, Debetz, 1964]. Age was estimated on the basis of suture closure and dental attrition [White, Folkens, 2005]. In rare cases, sex and age were ascertained from documental evidence.

The following age cohorts were used: juvenis (juv.) – individuals with erupted second permanent molars and without speno-occipital synostosis; adultus (ad.) – 20-35 years, maturus (mat.) – 35-55; senilis (sen.) – above 55. The codes «ad.-mat.», «mat.-sen.» were used in cases of transitional age and correspond approximately to 30-40 and 50-60 years. Cases where locating landmarks is difficult because of poor preservation are marked red. Measurements of orbital width and canine fossa depth are marked blue if they were taken on the right side because of poor preservation of the left side.

## **Brief description of samples**

### **Bashkirs**

The Bashkir series consists of 326 male and 13 female crania. Most of them (304 male crania relating to 9 groups) were measured and published by R.M. Yusupov [1989]. Crania dating to the 17th – early 20<sup>th</sup> century were collected by himself during his excavations to Bashkortostan and the Chelyabinsk Region. Sex and age determinations were based on cranial and postcranial morphology. Other specimens were collected by N.M. Maliev and D.P. Nikolsky at several cemeteries in the Dyoma River basin and near Zaitovo village in modern Bashkortostan and some were excavated in Chelyabinsk Region. Crania were measured and published by V.P. Alexeyev [1971]. Sex and age determinations were apparently based on cranial morphology.

### **Belorussians**

The series includes 15 male and two female crania collected in various areas of Belorussia and adjacent parts of Russia and Poland. They were measured and published by V.P. Alexeyev [1969]. Sex and age were apparently diagnosed on the basis of cranial criteria.

### **Karelians**

Ten Karelians samples, totaling 180 male and 120 female crania, were collected at several abandoned rural cemeteries in the Republic of Karelia, mostly by the Northern European Paleo-Anthropological Expedition, and were measured and published by V.I. Khartanovich [1986]. One series is from the Tver Region. Judging by ethnographic data, burials date to the late 1800s and early 1900s. In some cases, sex determination was based on cranial criteria; in others, pelvic traits were used. Crania from Alozero in northern Karelia, dating to late 17th – early 20<sup>th</sup> century, were unearthed by M.M. Shakhnovich. Group means were published by V.I. Khartanovich and I.G. Shirobokov [2012]. Sex was diagnosed on the basis of cranial and pelvic criteria. The series from Tver Region was measured and published by V.P. Alexeyev [1969].

### **Komi Permyaks**

The Komi Permyak sample includes two subsamples. The first was collected by N.M. Maliev at a cemetery near Kudymkar. Crania were measured and published by V.P. Alexeyev [1969]. The second subsample was collected by the Northern European Expedition in Pyatigory. Crania were measured by V.I. Khartanovich and remain unpublished. The total number of crania is 26 male and 12 female. Sex and age determinations are based on cranial criteria.

### **Komi Zyrians**

The largest part of Komi Zyrian series consists of two subsamples collected at Podyelsk and Griva cemeteries in the Perm Region. Both date to the 19<sup>th</sup> and early 20<sup>th</sup> century and were studied and published by V.I. Khartanovich [1991]. The total number of crania is 88 (60 male and 28 female). Two more skulls were included in the Komi Permyak series by V.P. Alexeyev [1969]. Sex and age were diagnosed on the basis of cranial morphology.

### **Letts**

The series consists of 132 male and 107 female crania. Most specimens, dating to the 17<sup>th</sup> and 18<sup>th</sup> centuries, were collected by V.P. Alexeyev at Durbe and Ludza cemeteries. Sex and age diagnoses are presumably based on cranial and postcranial morphology. Most other specimens, dating to the 19<sup>th</sup> century, were obtained by maceration in hospitals of former Livland and Kurland (present-day Latvia), and in Vitebsk, Belorussia, in the 19<sup>th</sup> century. Means were published by V.P. Alexeyev [1969]. Sex and age attributions are based on hospital records.

### **Mari**

The series consist of 85 male and 76 female skulls. Most of them were excavated by M.S. Akimova on the territory of Mari El Republic. The series, dating to the 19<sup>th</sup> century, represent both Lowland and Highland Mari. Other crania were excavated by A.N. Stoyanov and A.Kh. Khalikov at different cemeteries dating to the 17<sup>th</sup> and 18<sup>th</sup> centuries. Most specimens were measured and published by V.P. Alexeyev, who also used M.S. Akimova data with minor corrections [Alexeyev, 1969]. Sex and age determinations are based on cranial morphology.

### **Mordvinians**

The series consists of 73 male and 55 female crania collected at various cemeteries of the Ulyanovsk and Penza regions and in Tatarstan. They were excavated in the habitation areas of Erzya, Moksha and Teryukhans but in many instances the ethnic attribution remains uncertain. Most Erzya specimens were excavated at Novaya Pyrma cemetery, those representing Moksha, at Butsky and Payovsky, those of Teryukhans, at Kuzhadon and Sarley. The series were published by V.P. Alexeyev [1969], who used his own data along with those by M.S. Akimova and T.I. Alexeyeva. Sex and age diagnoses are based on cranial morphology.

## **Russians**

The Russians sample, consisting of 444 male and 225 female crania, is the largest in our database. Some specimens were collected at urban and rural cemeteries and thus mirror the population structure (the cities of Simbirsk, Kazan, Staraya Ladoga, and Izhevsk, the villages of Lezye and Golyany, and Kizhi Island). Others make up a pooled sample from Akhangelsk, Vladimir, Kaluga, Kostroma, Kursk, Leningrad, Novgorod, Orel, Pskov, Tver, Tula, Yaroslavl, etc., in European Russia. Most of these samples consist of separate crania collected at hospitals through maceration of cadavers. Sex and age determinations are based on various criteria. In some cases such as those concerning Izhevsk, Staraya Ladoga, and Golyany, postcranial bones are available. For macerated specimens (mostly pooled across different territories), hospital records were used. In certain cases (Kizhi, Lezye, part of pooled series), cranial criteria were employed. Most skulls were measured and published by V.P. Alexeyev [1969]. Crania from Troitskoe (19<sup>th</sup> and early 20<sup>th</sup> century), Mikhailovskoye (late 1700s), Izhevsk and Golyany in Udmurtia, and Lezye in the Leningrad Region were measured by I.G. Shirobokov and remain unpublished. The series from St George Church in Staraya Ladoga was collected by N.V. Grigoryeva, measured by I.G. Shirobokov, and published by several authors [Moiseyev et al., 2016]. The series collected in 2006 near Transfiguration Church on Kizhi Island was measured and published by V.I. Khartanovich and I.G. Shirobokov [2008]. Later it was augmented by measurements of crania collected in 2009 [Khartanovich, Shirobokov, 2014].

## **Sami**

The Sami series consists of several samples collected in the Murmansk region of Russia and in northern Finland. It totals 154 male and 46 female crania. The Murmansk sample, collected by the Northern European Expedition from the Institute of Ethnography, Leningrad, in 1975-76, was published by V.I. Khartanovich [1980, 2004]. Crania come from several late 19<sup>th</sup> – early 20<sup>th</sup> century cemeteries near abandoned villages. Sex and age diagnoses of most specimens are based on cranial criteria. In the case of Chalmny-Varreh, postcrania were used as well. The Sami samples from Finland (Inari, Utsjoki, and Kittilä) were measured by A.G. Kozintsev at Helsinki University in 1985 (see [Kozintsev, 1991] for details) and were never published before. Sex and age determinations are based on cranial morphology.

## **Kazan Tatars**

The pooled series of Kazan Tatars, consisting of 37 male and 11 female crania collected by several researchers in Tatarstan and in Ulyanovsk Region, was published by V.P. Alexeyev [1971]. Sex and age determinations were apparently based on cranial morphology.

### **Udmurts**

The series includes 157 male and 130 female skulls, representing both northern and southern Udmurts. A few crania are those of Udmurts from Tatarstan. Most specimens were collected by N.I. Shutova in Udmurtia and by N.M. Maliev in Tatarstan. They date to the 17<sup>th</sup>–19<sup>th</sup> centuries. Crania collected by N.M. Maliev and a few specimens from Balezino (Chuboisky), Udmurtia, collected by P.G. Tarasov, were published by V.P. Alexeyev [1969]. Others were measured and recently published by I.G. Shirobokov [2014]. Sex and age determinations are based on cranial morphology.

### **Finns**

The series, which includes several subsamples from various regions of Finland and Russia, consists of 321 male and 22 female skulls. Some of those published by V.P. Alexeyev [1969] and vaguely referred to as crania of Ingrian Finns, were collected at Finnish cemeteries of what is now Leningrad Region or from macerated cadavers at hospitals in Leningrad Region and in southern and eastern Finland. The remaining crania were measured by A.G. Kozintsev at Helsinki University (see [Kozintsev, 1991] for details) and published by V.I. Khartanovich [1995]. In most cases sex and age determination was based on cranial criteria except for skulls obtained by maceration and documented by hospital records.

### **Swedish-speaking Finns**

This group is represented by a single sample collected at Pedersöre (Pietarsaari), Ostrobothnia, Finland and owned by Helsinki University. It includes 51 male crania measured by A.G. Kozintsev (see [Kozintsev, 1991] for details). The means were published by V.I. Khartanovich [1995]. Sex and age determinations were based on cranial morphology.

### **Chuvashes**

The Chuvash series consist of 131 male and 79 female skulls. Most were collected by N.M. Maliev at Bazarnye Mataki, Tatarstan, others, by M.S. Akimova at Tubakh-Mazar and Tatmysh-Yugelevo. The means were published by M.S. Akimova [1955]. Later complemented group was published by V.P. Alexeyev [1971]. Sex and age determinations were apparently based cranial criteria.

### **Estonians**

The series, dating to late 19<sup>th</sup> – early 20<sup>th</sup> century, consists of 17 male and 4 female skulls collected in various parts of Estonia. They were measured by V.P. Alexeyev [1969]. Because most were collected at hospitals, information about sex and age comes from hospital records.

## References

- Akimova M.S. Paleoantropologicheskie materialy s territorii Chuvashskoi ASSR // *Kratkie soobshcheniia IE AN SSSR*. 1955. Vol.XXIII. Pp.78-92.
- Akimova M.S. *Kraniologicheskii ocherk udmurtov* // *Voprosy antropologii*. Vol. 10. 1962. Pp.110-115.
- Alexeyev V.P. *Proiskhozhdenie narodov Vostochnoi Evropy (kraniologicheskoe issledovanie)*. Moscow: Nauka, 1969.
- Alexeyev V.P. *Ocherk proiskhozhdeniia tiurkskikh narodov Vostochnoi Evropy v svete dannykh kraniologii* // *Voprosy etnogeneza tiurkoiazychnykh narodov Srednego Povolzh'ia*. Kazan, 1971. Pp. 232-271.
- Alexeyev V.P., Debetz G.F. *Kraniometriia. Metodika antropologicheskikh issledovaniia*. Moscow: Nauka, 1964.
- Alexeyeva T.I., Efimova S.G., Ehrenburg R.B. *Kraniologicheskie i osteologicheskie kolleksi* Instituta i Muzeya antropologii MGU. Moscow: Izdatelstvo Moskovskogo universiteta, 1986.
- Kozintsev A.G. *Kranioskopicheskie osobennosti naseleniia Finliandii* // *Proiskhozhdenie saamov*. Moscow: Nauka, 1991. P. 34-52.
- Moiseyev V.G., Grigor'eva N.V., Shirobokov I.G., Khartanovich V.I. *Kraniologicheskie materialy iz raskopok u tserkvi Sviatogo Georgiia v Staroi Ladoge* // *Radlovskii sbornik. Nauchnye issledovaniia i muzeinye proekty MAE RAN v 2015 g.* Saint Petersburg, 2016. Pp.390-399.
- Khartanovich V.I. *Kraniologiia karel* // *Antropologiia sovremennogo i drevnego naseleniia Evropeiskoi Chasti SSSR*. Leningrad: Nauka, 1986. Pp. 63-120.
- Khartanovich V.I. *K kraniologii naseleniia Severo-Zapadnogo Priladozh'ia XIX – nachala XX v.* // *Balty, slaviane, pribaltiiskie finny. Etnogeneticheskie protsessy*. Riga, 1990.
- Khartanovich V.I. *Novye materialy k kraniologii komi-zyrian* // *Sbornik MAE*. 1991. Vol. 44. (Novye kolleksi i issledovaniia po antropologii i arkheologii). Pp. 108-125.
- Khartanovich V.I. *Kraniologiia izhor* // *Rasy i narody*. Vol. 30. Moscow, 2004. Pp. 96-12
- Khartanovich V.I. *Materialy k kraniologii finnov* // *Antropologiia segodnia*. Vol. 1. Saint Petersburg, 1995. Pp. 71–89.
- Khartanovich V.I. *Novye materialy k kraniologii saamov Kol'skogo p-ova* // *Sbornik MAE*. 1980. Vol. 36. Pp. 35–47.
- Khartanovich V.I. *Novye kraniologicheskie materialy po saamam Kol'skogo poluostrova* // *Paleoantropologiia, etnicheskaia istoriia, etnogeneza*. *Sbornik k 75-letiiu I. I. Gokhmana*. Saint Petersburg, 2004. Pp. 108–125.

Khartanovich V.I., Shirobokov I.G. K antropologii naseleniia Severo-Zapadnogo Obonezh'ia (po kraniologicheskim materialam XVIII – nach. XX vv. iz mogil'nika o-va Kizhi) // Aktual'nye napravleniia antropologii. Sbornik, posviashchennyi 80-letiiu akademika RAN T. I. Alexeyevoi. Moscow: IA RAN, 2008. Pp. 212-221.

Khartanovich V.I., Shirobokov I.G. K probleme formirovaniia antropologicheskogo sostava naseleniia “Lopskikh pogostov” (po kraniologicheskim materialam mogil'nika XVII – nachala XIX veka Alozero) // Arkheologiiia, etnografiia i antropologiiia Evrazii. 2012. №2. Pp.141-152.

Khartanovich V.I., Shirobokov I.G. Pervye materialy po paleoantropologii Kizhskogo arhipelaga (po rezul'tatam okhrannykh raskopok u tserkvi Preobrazheniia Gospodnia v 2006-2009 gg.) // Tserkov' Preobrazheniia Gospodnia na ostrove Kizhi: 300 let na Zaonezhskoi zemle. Petrozavodsk, 2014. Pp.204-215.

Shirobokov I.G. Materialy k kraniologii udmurtov XVII-XIX vv. // Radlovskii sbornik. Nauchnye issledovaniia i muzeinye proekty MAE RAN v 2013 g. Saint Petersburg, 2014. Pp.65-76.

Yusupov R.M. Materialy po kraniologii bashkir. Ufa: BNC UrO RAN, 1989.

Howells W.W. Cranial Variation in Man. A Study by Multivariate Analysis of Patterns of Differences Among Recent Human Populations. Papers of the Peabody Museum of Archeology and Ethnology. Vol. 67. Cambridge, Mass.: Peabody Museum, 1973.

Howells W.W. Skull Shapes and the Map. Craniometric Analyses in the Dispersion of Modern Homo. Papers of the Peabody Museum of Archaeology and Ethnology. Vol. 79. Cambridge, Mass.: Peabody Museum, 1989.

Howells W.W. Who's Who in Skulls. Ethnic Identification of Crania from Measurements. Papers of the Peabody Museum of Archaeology and Ethnology. Vol. 82. Cambridge, Mass.: Peabody Museum, 1995.

White T.D., Folkens P.A. The Human Bone Manual. New York: Elsevier Academic Press, 2005.

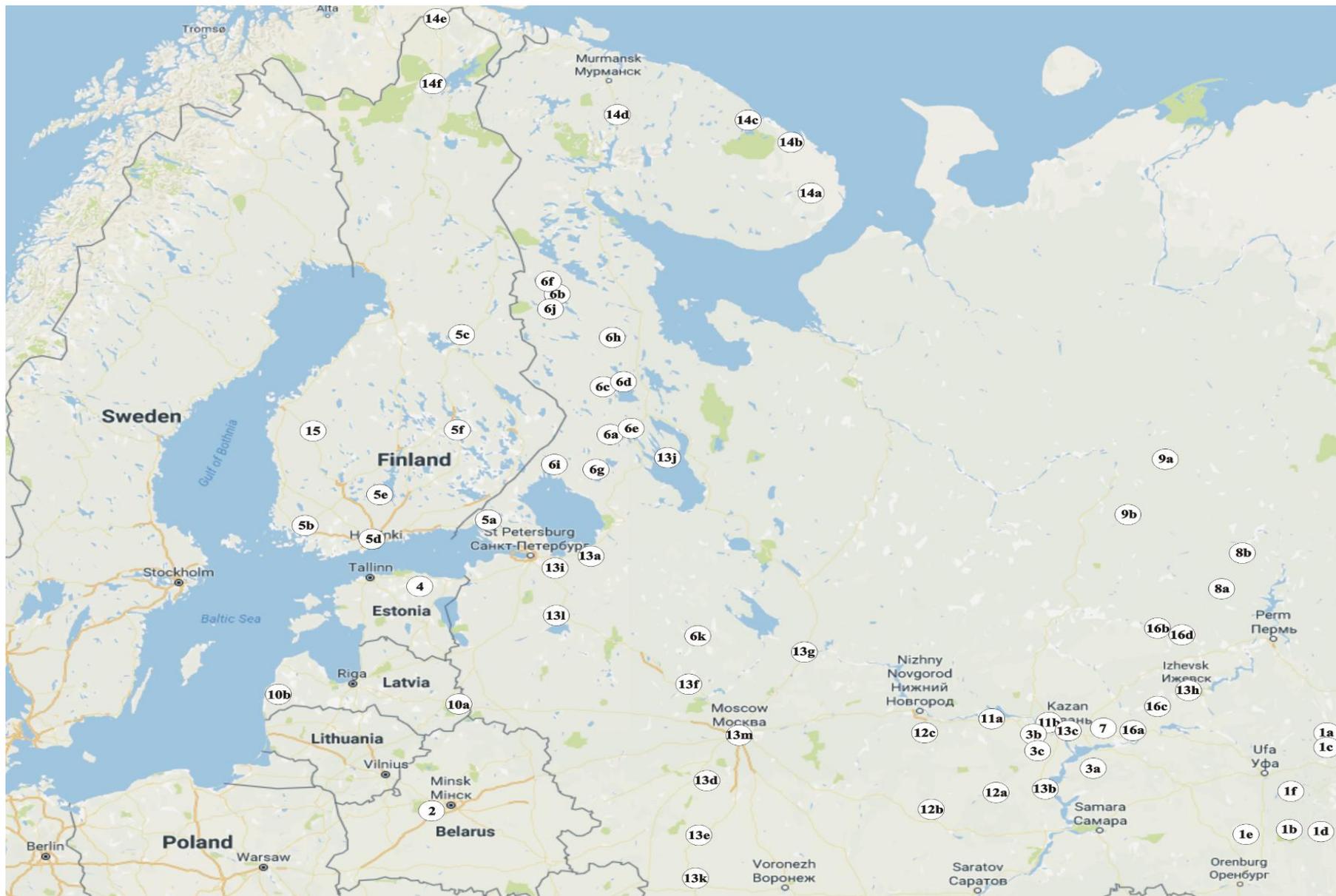


Рис. 1. Расположение наиболее крупных серий каждой из этнических групп, представленных в базе данных  
 Fig. 1. Location of the largest cranial series represented in the database (see number codes in the table)

Numeration of samples:

- 1 – Bashkirs: a – Abdrashitovo and Staro-Khalilovo villages, Duvansky District, Bashkortostan; b – Ishtuganovo village, Meleuzovsky District, Bashkortostan; c – Akhunovo village, Salavatsky District, Bashkortostan; d – Kuseevo village, Baymaksy District, Bashkortostan; e – Nizhny Allaguvat village, Sterlibashevsky District, and Staro-Chetyrmanovo village, Fyodorovsky District, Bashkortostan; f – Mullakaev village, Arkhangelsky District, Bashkortostan;
- 2 – Belarusians, Belarus;
- 3 – Chuvashes: a – Bazarnye Mataki village, Alkeevsky District, Tatarstan; b – Katergino village, Kozlovsky District, Chuvashia; c – Tatmysh-Yugelevo village, Batyrevsky District, Chuvashia;
- 4 – Estonians, Lääne-Viru County, Estonia;
- 5 – Finns: a – Vyborg and Vyborg District, Leningrad Oblast; b – Varsinais-Suomi, Finland; c – Kainuu or Northern Ostrobothnia, Paltamo, Finland; d – Helsinki and Uusimaa, Finland; e – Tavastia, Finland; f – Northern Savonia, Finland;
- 6 – Karelians: a – Turha village, Medvezhyegorsky District, Karelia; b – Chiksha village, Kalevsky District, Karelia; c – Pekkavuura village, Medvezhyegorsky District, Karelia; d – Bokonvuura village, Medvezhyegorsky District, Karelia; e – Kondievuura village, Medvezhyegorsky District, Karelia; f – Regyarvi village, Kalevsky District, Karelia; g – Imatyarvi village, Suoyarvsky District, Karelia; h – Kompakovo village, Belomorsky District, Karelia; i – Suistamo village, Suoyarvsky District, Karelia; j – Alozero burial ground, Kalevsky District, Karelia; k – Tver Oblast;
- 7 – Kazan Tatars, Tatarstan;
- 8 – Komi Permyaks: a – Kudymkar, Perm Krai; b – Pyatigory village, Kosinsky District, Perm Krai;
- 9 – Komi Zyrians: a – Pod'yelsk village, Kortkerosky District, Perm Krai; b – Griva village, Koygorodsky District, Perm Krai;
- 10 – Letts: a – Ludza, Latgale, Latvia; b – Durbe cemetery, Courland, Latvia;
- 11 – Mari: a – Mari Highland, cemeteries near Kozmodemyansk and Urzhum, Mari El Republic; b – Mari Lowland, Nemets-Sala burial ground, Mari El Republic;
- 12 – Mordvinians: a – Erzya, Novaya Pyma, Kochkurovsky District, Mordovia; b – Moksha, Butsky cemetery, Narovchatsky District, Penza Oblast; c – Teryukhans, Sarley village, Dalnekonstantinovsky District, Nizhny Novgorod Oblast;
- 13 – Russians: a – Staraya Ladoga, Leningrad Oblast; b – Ulyanovsk, Ulyanovsk Oblast; c – Voskresenskaya church cemetery, Kazan; d – Kaluga Oblast; e – Oryol Oblast; f – Tver Oblast; g – Yaroslavl Oblast, h – Izhevsk and Golyany village, Udmurtia; i – Lezye village, Leningrad Oblast; j – Church of the Transfiguration cemetery, Kizhi Island, Lake Onega, Karelia; k – Kursk Oblast; l – Novgorod Oblast; m – Moscow;
- 14 – Sami: a – Chalmny-Varreh abandoned village, Kola Peninsula, Murmansk Oblast; b – Yokanga abandoned village, Kola Peninsula, Murmansk Oblast; c – Varzino village, Kola Peninsula, Murmansk Oblast; d – Pulozero village, Kola Peninsula, Murmansk Oblast; e – Utsjoki municipality, Lapland, Finland; f – Inari municipality, Lapland, Finland;
- 15 – Swedish speaking Finns, Pietarsaari, Ostrobothnia, Finland;
- 16 – Udmurts: a – cemeteries near villages Tsypia and Oshtarli, Mamadyshsky District, Tatarstan; b – Yarsky District, Udmurtia; c – Mozhginsky cemetery, Mozhginsky District, Udmurtia; d – Burinsky cemetery, Balezinsky District, Udmurtia.