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GLASS IN ANCIENT AND MEDIEVAL EASTERN EUROPE AS EVIDENCE OF INTERNATIONAL CONTACTS

Abstract: This paper deals with glass artifacts as markers of interregional economic, religious and cultural links, trade routes, and social stratification. It is focused on finds from Eastern Europe from the Bronze Age to the 17th–18th centuries A.D.

Keywords: glass beads, glass vessels, Eastern Europe, international links.

INTRODUCTION

Glass is one of the most ancient artificial materials possessing unique properties from which a variety of artifacts can be made. Among these are luxury artifacts and objects of applied art, tesserae for figured mosaics and stained glass, glass icons and ritual vessels, window-panes and tableware as well as small ornaments, i.e., arm rings, beads, fingerings, buttons and pendants. These artifacts were used in daily life, sold, donated, used to decorate clothes, interiors and architectural structures. They were symbols of their owner's social and economic position.

The value of glass as a historical source stems from its extensive application. Glass objects provide information on the formation and spread of glassmaking and on the place of glass in scientific concepts and the production of a given epoch. Chemical properties of glass and means of its production are of technological interest. Glass artifacts are important for the study of culture and daily life of a given epoch, e.g. the history of costume. Excavated glass objects are examined from the angle of their functions, peculiarities of their form and decoration, the spread and evolution of different type. They can also contribute to solving archaeological problems, like dating occupation deposits. If glass objects are addressed as „objets d'art", their study becomes focused on artistry, style and the emergence and evolution of artistic schools.

Tracing interregional economic, religious and cultural links, trade routes as well as social and wealth differentiation constitutes an important aspect of glass studies. This issue has been discussed by several authors: L'vova 1977; 2003; Callmer 1995; 1997; 2003; Shchapova 1998; Kovalevskaya 2000.

GLASS AS MARKER OF INTERREGIONAL ECONOMIC (TRADE) RELATIONS

Let us turn to beads as one of the most widespread categories of glass artifacts. They have been traded internationally since at least the Hellenistic period (Shchapova 1998, p. 135). The present investigation of beads as markers of interregional economic relations starts with the Middle Ages, however, when this role was especially prominent.

A high concentration of glass beads of various types and origins, including those of Near Eastern and Byzantine manufacture, was observed in certain regions of Northern Russia, such as the Ladoga and Beloe lakes area, in the 9th–12th centuries (Fig. 1). Why were these ornaments imported? The local population was traditionally engaged in the fur trade. According to Zlata A. L'vova, they bartered furs of beavers, squirrels, etc., for various imports, glass beads included (L'vova 1977, pp. 106–109; Zakharov, Kuzina 2008, pp. 207–208). According to L'vova, in the 9th-early 11th centuries Scandinavian merchants, the so-called Rus, brought Near Eastern beads to these territories. The furs that were traded for these beads were then taken to Volga Bulgaria and sold to Arab merchants for Arab silver. The acquired silver was exported by the same Rus to Western European countries where silver was lacking, such as Sweden, Norway and Poland (Callmer 1997, p. 199; *idem* 2003, p. 44). The Arabs in turn took the furs to the cities of the Samanid state and thence to the farthermost points of the Abbasid caliphate, to Spain and Northern Africa. All the participants were interested in the bead trade, in particular the Scandinavian dealers reaping the largest profit from it, since they acquired the remainder of silver resulting from the unequal bartering of beads for furs and the selling of the latter (L'vova 2003, pp. 152–153). From the 11th century on, importers of Byzantine beads replaced the Scandinavian merchants bringing Near Eastern beads to Northern Russia to trade them for furs (Callmer 1997, p. 200; *idem* 2003, p. 45; Shchapova 1998, p. 160). Yu.L. Shchapova agrees with L'vova in calling this unequal barter. J. Callmer shares this view, describing the barter of beads, which are characterized by inherent low production costs, for luxury goods (such as silk, spices, gold etc.) as unequal and typical of center-periphery relations (Callmer 1995, pp. 51, 53). This assessment, however, is held to be somewhat inaccurate. Barter was voluntarily based on the different value systems of its participants, the Scandinavian or Byzantine merchant on the one hand and the hunter/trapper on the other. Thus, the abundance of beads in Northern Russia is believed to be due to economic relations between the local population and foreign merchants, either Scandinavian or Oriental, and is indicative of the involvement of the local rural population in the fur trade.

Yet another example of reconstruction of interregional trade relations is related to the Rostov-Suzdal land (present-day Tver, Yaroslavl, Vladimir and Moscow provinces) and the Smolensk princedom (present-day Smolensk and Kaluga provinces) of Rus (Fig. 1). These lands were inhabited by a Finnish population on the east and the Slav tribe of the Krivichs on the west (Shchapova 1998, p. 147). A large proportion of the immense quantity of beads excavated from burial sites of the late 10th-early

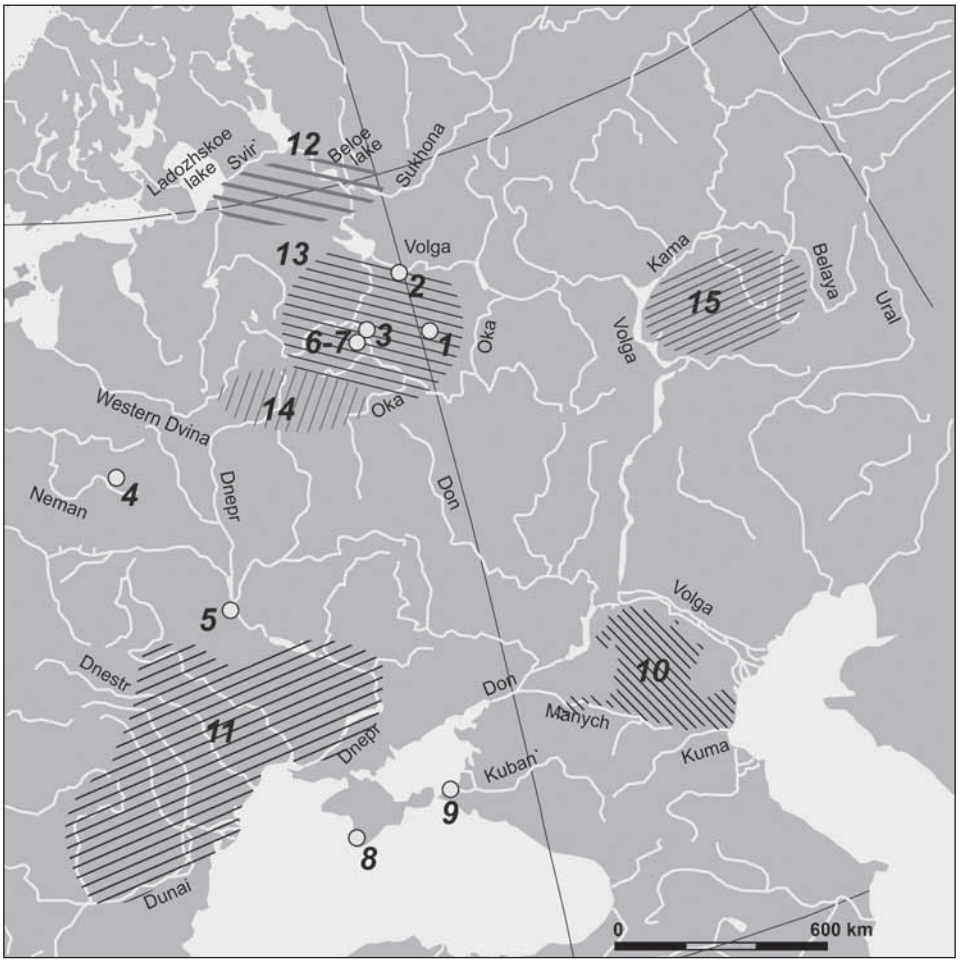

Fig. 1. Map of territories and sites mentioned in the paper

1 – Vladimir; 2 – Yaroslavl; 3 – Dmitrov; 4 – Novogrudok; 5 – Kiev; 6 – Myakinino barrow cemetery (Krasnogorsk district of the Moscow province); 7 – barrow near the village of Kholmy (Solnechnogorsk district of the Moscow province); 8 – Belbek IV cemetery (Southwest Crimea); 9 – Ilyich village (Taman peninsula); 10 – Eurasian steppes in present-day Kalmykia; 11 – territory of the Sîntana-de-Mureş/Chernyakhov culture; 12 – areas of the Ladoga and Beloe lakes; 13 – Rostov-Suzdal land; 14 – Smolensk princedom; 15 – Volga Bulgaria.

Processing E. Stolyarova; drawing O. Stadnik

12th centuries in this region were beads decorated with gold and silver foil (Fig. 2). On the contrary, in other areas of the Old Russian state, e.g. in Southern Russia, in what is now the Kievan province of the Ukraine and the vicinities of Chernigov, gold-glass beads are scarce (Fekhner 1959, p. 166). It is why this type of gold-glass beads was regarded as an ethnic marker of the Krivichs (Fekhner 1959, p. 162, note 1). The location of bead finds in northeastern and northwestern Russia would admittedly have implied their local manufacture. However, in both cases bead finds are indicative of the import of beads from the Near East (Fig. 2a) and then from Byzantium (Fig. 2b,

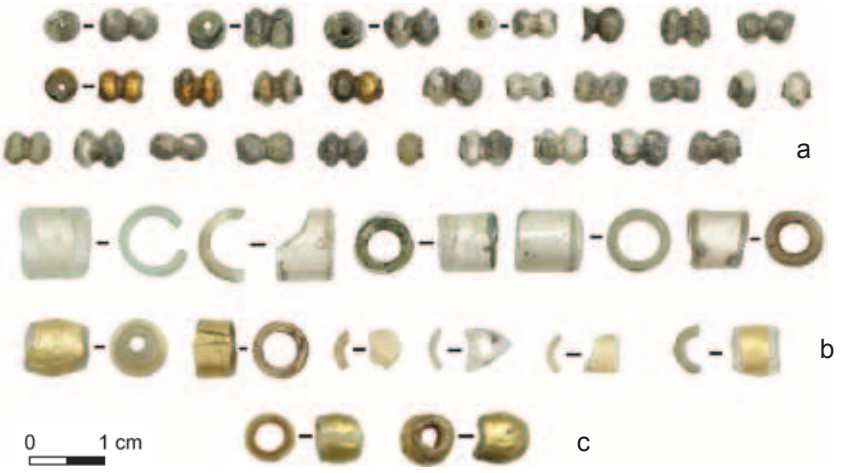

Fig. 2. Beads with gold and silver foil of the 9th–12th centuries

a – beads of Near Eastern origin from excavations in Yaroslavl; b – beads of Byzantine manufacture from excavations in Yaroslavl; c – gold-glass beads of Byzantine manufacture from a burial of the 1st half-mid 12th c. under barrow 1 of the Myakinino barrow cemetery (Krasnogorsk district of the Moscow province)

After Stolyarova 2015, Figs 1a, 5b

c) (an assumption sustained by an investigation into technologies and chemical composition analyses,[1] Table 1) interested in the fur trade with the said Russian territories. According to M.V. Fekhner, widespread import of beads is indicative of the involvement of the rural population of pre-Mongol Rus in internal trade. It is worth noting that the inhabitants of both the areas lying along the main trade routes and the more distant territories traded on the commodities market. Consequently, Fekhner disagreed with the then widely accepted assumption that products of rural handicrafts, fishing, hunting and trapping appearing on the internal and external market were taken from peasants in keeping with feudal law. It seems likely that imported beads were acquired by the local population from city markets and fairs through peddlers (Fekhner 1959, p. 173). Routes by which gold- and silver-glass beads were brought to Rus were traced through the Volga Bulgaria to the lower reaches of the Oka and then either by the Klyazma and Nerl to the Upper Volga or by the Oka and Ugra to the upper reaches of the Desna, Dniepr and Sozh (Fekhner 1959, p. 166).

The same principle of bartering beads for furs was used in Russia later, in the 17th c. At this time beads of Dutch and Venetian manufacture (Figs 3; 4; Table 2) were brought to Archangel and thence to Siberia, where they were either traded for furs or used as salary (L'vova 1977, p. 108; *eadem* 2003, pp. 152–153). In the same way, Europeans acquired furs from the North American Indians, gold and precious stones from the population of Central and Latin America and spices from the inhabitants of the South Sea Islands. This barter of a certain commodity for beads is based on the belief in the capacity of beads to protect against evil. According to

[1] Analyses carried out by A.N. Egor'kov at the Laboratory of Archaeological Technology of the Institute of the History of Material Culture, Russian Academy of Sciences in St Petersburg.

Table 1. Optical emission spectral analysis data for glass beads with gold and silver foil of Near Eastern and Byzantine manufacture (774–27 from the Myakinino barrow cemetery in the Krasnogorsk district of the Moscow province [2004]; 829–26, 830–26 from Yaroslavl [2007]; 853–43–46 from Yaroslavl [2009]*)

Reference number	774–27	829–26	830–26	853–43	853–44	853–45	853–46
Color	colorless	colorless +Au	colorless +Ag	colorless	colorless	colorless	colorless
SiO_2	base	base	base	base	base	base	base
Na_2O	15	17	16	18	17	18	16
K_2O	2.6	1.6	2.2	3.9	3.9	4.3	3.2
CaO	15	9.0	4.0	7.8	5.0	5.3	7.6
MgO	7.0	2.8	3.0	1.5	2.0	1.7	1.7
Al_2O_3	3.6	3.2	1.6	2.1	2.1	2.9	1.9
Fe_2O_3	0.9	0.3	0.3	1.0	1.2	1.5	1.0
MnO	2.4	0.1	0.5	0.8	0.7	0.9	1.4
TiO_2	0.1	0.2	0.2	0.2	0.1	0.1	0.1
PbO	0.01	–	–	1.2	–	–	–
SnO_2	–	–	–	–	–	–	0.01
CuO	–	–	–	–	–	–	–
CoO	–	–	–	–	–	–	–
Sb_2O_5	–	–	–	–	–	–	–
Ag_2O	0.01	–	–	0.06	0.06	0.04	0.01
NiO	–	–	–	–	–	0.01	0.01
Au	+	–	–	–	–	–	+

* The numbers in brackets, in the titles of Tables 1, 2, 5 and 6 denote the dates when excavations were conducted.

Shchapova, this form of consciousness is characteristic of peoples on the pre-class or early class stage of evolution (Shchapova 1998, pp. 159–160). Thus, numerous finds of glass beads in a certain territory imply not their local manufacture, but the existence of established interregional trade routes and economic interests on the part of suppliers of this commodity in a given territory.

The abundance of glass and faience beads in the North Pontic region, in particular in the Belbek IV cemetery in southwest Crimea, on the outskirts of the city of Sevastopol (Fig. 1), should be interpreted apparently in the same fashion. The cemetery belongs to the Roman period and is dated to the 2nd quarter of the 1st c. –1st half of the 3rd c. All the beads intended for the local population were brought from the Roman provinces and even Rome proper, from the Near East, Eastern Mediterranean and Egypt (Fig. 5; Table 3).

Owing to their rarity and high price, all new materials, including glass, are initially regarded as sacred objects of great value (Shchapova 1983, p. 91). In the course of time, every new material gradually loses its privileged position, becoming a useful daily commodity. The Roman age, to which the Belbek IV cemetery belongs, saw the

Fig. 3. Beads of the 17th c. of Venetian or Dutch manufacture from the excavations in Yaroslavl.
After Faradzheva 2008, Fig. 460

most significant innovations throughout the history of glassmaking. A case in point is the introduction of glassblowing as a technique. Its evolution as well as the overcoming of its drawbacks changed the view of glass as a material (Shchapova 1983, p. 122). Blowing enabled glassmakers to speed up glassware production. Vessels became lighter and their walls thinner, consequently less glass-metal was required in comparison with press-molding, mosaic technique or welding, the number of artifacts increased and productivity was enhanced. Making narrow-mouthed vessels from an entire blown bulb and the polishing of the sharp rim of wide-mouthed vessels with the aid of the pontil further cheapened glass production (Shchapova 1983, pp. 120, 137). As a result, more and more glass objects of daily and practical use became consumer goods. From the mid-2nd c. A.D. table, container, perfumery, etc. glassware, as well as window glass were in common use among the Romans (Shchapova 1983, p. 138). Glass lost its status of a precious sacred material and went out of fashion in the core territory of the Roman Empire. Glass beads were no more regarded as amulets capable of protecting their owner from evil. Their status as luxury items survived primarily in the barbarian milieu and the abundance of glass beads, no longer fashionable in the metropolis, in many of the burials in the Belbek IV cemetery allows these burials to be regarded as barbarian.

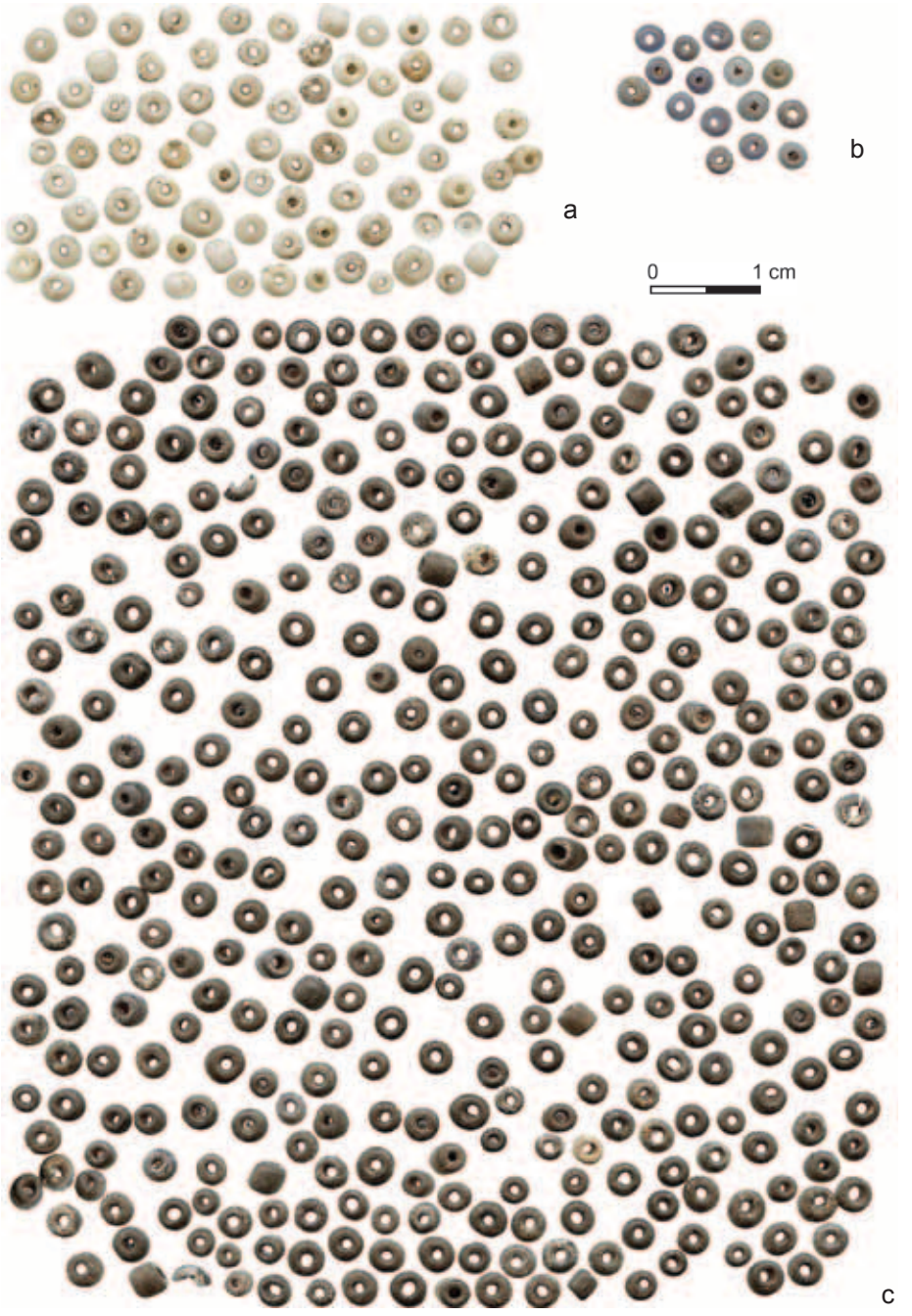

Fig. 4. Seed beads of the 17th–18th centuries of Venetian manufacture from the barrow near Kholmy village (Solnechnogorsk district of the Moscow province)

a – white opaque seed beads; b – blue-violet semi-transparent seed beads; c – purple semi-transparent seed beads. After Khizhnyakov 2009, pp. 94–95

Fig. 5. Glass, faience and jet beads from burial 211 of the Belbek IV cemetery (Southwest Crimea) © State Historical Museum.

Photo I. Seden'kov

Thus, the widespread distribution of glass beads in excavations from the North Pontic area implies a continuous economic interest of the classical civilizations in trade with this territory. It would seem that glass beads, together with other imported goods, could be bartered for livestock, fish, honey, fur, and slaves (Kovalevskaya 2000, p. 222). The glass beads under study are a luxury item used as tender or a kind of circulating medium in international trade between classical civilizations, Rome in particular, and the North Pontic Barbaricum.

GLASS AS MARKER OF ETHNIC CONTACTS

Finds of beads in the Bronze Age burial sites of the Eurasian steppe, in what is now Kalmykia (Fig. 1), should be interpreted otherwise. Most of them are made of true and vitreous faience and only a few of glass proper (Figs 6; 7). The study of their chemical composition has shown that they were manufactured in Egyptian and Near Eastern centers exclusively (Table 4). Rather than to trade relations, the

Table 2. Optical emission spectral analysis data for glass beads of Dutch and Venetian manufacture (829–42, 830–34, 37–39 from Yaroslavl [2007]; 853–21–30 from a barrow grave near the village Kholmy in the Solnechnogorsk district of the Moscow province [2008]*)

Reference number	829–4	830–34	830–37	830–38	830–39	853–21	853–22	853–23	853–24	853–25	853–26	853–27	853–28	853–29	853–30
Color	white	blue	tur-quoise	beige	color-less	blue-green	white	indigo	color-less	red-brown	yellow	tur-quoise	green	white	purple
SiO_2	base	base	base	base	base	base		base	base	base	base	base	base	base	base
Na_2O	18	17	18	0.03	17	0.3	13	17	17	18	0.03	18	0.1	15	16
K_2O	2.0	4.3	2.0	1.6	3.4	6.8	4.4	2.8	3.2	3.6	–	4.8	2.7	3.9	4.8
CaO	4.7	5.0	2.7	0.7	3.3	8.9	0.9	8.0	4.3	8.5	0.5	3.8	0.6	11	10
MgO	2.7	2.8	1.7	0.1	0.8	0.5	0.1	1.0	0.9	1.9	0.1	1.2	0.1	2.2	2.8
Al_2O_3	1.6	1.0	0.5	0.3	1.1	0.3	0.1	0.5	0.5	1.1	0.1	0.5	0.1	1.2	2.2
Fe_2O_3	0.6	0.6	0.4	0.2	0.5	0.2	0.2	0.5	0.8	1.7	0.7	0.6	0.2	1.5	1.8
MnO	0.03	0.04	0.04	0.03	0.2	0.1	0.05	0.04	0.3	0.4	–	–	–	0.2	5.1
TiO_2		0.02	0.02	0.01	0.02	0.07	0.06	0.1	0.1	0.1	0.04	0.06	0.01	0.1	0.1
PbO	–	–	–	44	0.5	27	33	–	–	0.2	43	0.06	33	–	0.09
SnO_2	–	0.04	–	–	–	0.03	–	–	–	0.04	0.03	0.02	0.01	–	0.01
CuO	–	1.2	0.7	0.1	–	0.7	0.2	–	–	0.8	–	1.2	0.5	–	–
CoO	–	–	0.01	–	–	–	–	0.03	–	–	–	–	–	–	–
Sb_2O_5	4.3	–	0.2	0.2	–	0.04	0.07	–	–	0.4	0.07	0.07	0.03	2.8	–
Ag_2O	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
NiO	–	–	–	–	–	–	–	0.04	–	0.01	–	0.02	–	0.01	–
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* See the footnote to the Table 1.

Table 3. Optical emission spectral analysis data for glass (762–14; 756–42–47, 50, 52, 53; 757–18, 19, 21, 23) and faience (757–15) beads from the Belbek IV necropolis

Reference number	762–14	756–42	756–43	756–44	756–45	756–46	756–47	756–50	756–52	756–53	757–15	757–18	757–19	757–21	757–23
Color transparency	red-orange, opaque	red-orange, opaque	white, opaque	green, transparent	green, transparent	red-orange, opaque	white, opaque	white, opaque	white, opaque	green, transparent	turquoise, opaque	red-orange, opaque	orange, opaque	red-brown, opaque	green, transparent
SiO_2	base	base	base	base	base	base	base	base	base	base	base	base		base	base
Na_2O	14	16	15	14	15	14	15	16	18	17	0.3	15	12	15	16
K_2O	2.2	1.8	1.1	1.5	1.4	1.2	1.2	1.1	1.3	1.2	1.6	1.7	2.3	2.6	1.6
CaO	10	5.3	4.5	7.0	5.3	6.0	6.4	3.9	6.0	5.7	1.6	5.0	10	12	10
MgO	2.4	2.0	2.9	2.7	3.1	2.9	4.2	2.3	4.1	2.0	0.2	1.9	1.8	3.3	2.8
Al_2O_3	1.8	1.3	3.0	3.2	3.0	2.4	2.6	0.7	1.3	2.4	1.6	2.8	3.8	2.8	3.8
Fe_2O_3	1.2	0.9	0.5	1.3	1.2	2.0	0.6	0.5	0.3	1.0	0.9	1.6	1.5	1.7	1.3
MnO	0.5	0.2	0.01	0.3	0.4	0.7	0.2	–	0.01	0.08	0.01	0.3	0.5	0.4	0.4
TiO_2	0.2	0.2	0.09	0.2	0.2	0.2	0.09	0.1	0.09	0.3	0.04	0.07	0.1	0.1	0.2
PbO	7.0	14	–	7.5	2.8	13	0.02	0.08	0.03	0.9	0.2	1.3	43	13	2.0
SnO_2	0.4	0.4	–	0.2	0.2	0.5	–	–	–	–	0.3	0.2	2.0	0.7	0.1
CuO	1.8	2.4	–	1.7	1.6	2.2	–	–	–	1.4	1.0	0.8	5.0	2.0	1.6
CoO	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Sb_2O_5	0.8	0.3	1.8	1.0	0.2	0.7	2.5	0.9	1.4	0.4	–	0.07	0.5	0.4	0.3
Ag_2O	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Table 4. Optical emission spectral analysis data for the Bronze Age glass (687–18; 706–49) and faience (687–14, 20–23, 25; 706–13, 50; 714–22; 733–19, 22; 749–24, 25) beads of Egyptian and Near Eastern manufacture from Kalmykia

Reference number	687–14	687–18	687–20	687–21	687–22	687–23	687–25	706–13	706–49	706–50	714–22	733–19	733–22	749–24	749–25
Color	white*	green	white*	brown	green	white*	white*	white*	blue	white*	brown	green	green	green	green
SiO_2	base	base	base	base	base	base	base	base	base	base	base	base	base	base	base
Na_2O	7.5	10	2.0	4.7	0.9	1.5	2.3	2.4	13	1.6	6.0	0.02	0.3	4.5	2.1
K_2O	–	2.3	–	–	–	–	–	2.5	4.0	–	2.0	0.9	1.4	1.2	1.0
CaO	4.1	4.4	2.4	2.5	2.3	2.7	2.0	0.1	0.6	0.2	2.5	0.6	6.5	1.1	0.6
MgO	1.1	2.1	1.0	0.3	0.3	0.4	0.3	0.8	1.9	0.7	0.9	0.06	0.7	0.8	0.3
Al_2O_3	8.0	7.4	2.7	1.3	1.5	1.6	1.6	0.8	11	1.8	0.9	0.4	3.9	3.0	0.2
Fe_2O_3	2.1	3.2	2.1	11	2.5	2.3	2.2	0.6	2.3	1.0	1.4	0.2	1.3	1.2	0.5
MnO	0.01	–	–	0.03	0.01	0.02	0.01	0.01	0.02	0.01	0.05	–	–	0.02	–
CuO	–	3.8	–	–	0.5	–	1.2	1.0	1.8	2.3	–	1.9	4.5	3.0	1.1
TiO_2	0.1	0.09	0.05	0.02	0.04	0.04	0.05	0.06	0.2	0.04	0.05	0.01	0.1	0.3	0.03
Sb_2O_5	–	–	–	–	–	–	–	0.08	–	–	–	–	–	–	–
PbO	–	–	–	–	–	–	–	0.3	–	–	–	–	–	–	–
CoO	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
SnO_2	–	–	–	–	–	–	–	0.3	–	–	–	–	–	0.01	–

* Corroded.

Fig. 6. Catacomb Grave Culture necklace: faience, glass, and jet. The Vostochnyi Manych cemetery, barrow 59 (Kalmykia).
After Stolyarova 2000, Fig. 1

appearance of these items on the Eurasian steppe in the Bronze Age may to be linked to ethnic contacts between the steppe population and that of the Caucasus which was the first recipient of beads owing to the trade of this region with the Near East.

A non-local population originating from the Caucasus appears to have been present in the steppe from the Bronze Age on according to scientific studies (Shishlina 2013, p. 348). This population could have comprised young women married into the steppe people, men whose life was on the trans-steppe routes, and aged people coming north to the steppe to visit their relatives (Shishlina 2013, pp. 353–354). Grave goods from burials comprise artifacts rare in the steppe that were imported from the Caucasus. Among them are various utensils, wagons, and prestigious ornaments, including beads, made from an unknown and therefore valuable material, i.e., both faience and glass silicate (Shishlina 2013, pp. 351, 354). It seems likely that the inhabitants of the steppe maintained close contacts with people from the Caucasus. These contacts were prompted by transhumance. Seasonal climate change resulted in herds moving back and forth between the north and south, forming nomadic itineraries and establishing trade networks. Regular ties led to the formation of personal family relations.

Near Eastern beads recovered from Old Russian burials of the 12th c. A.D., especially seed beads which were the most widespread in the 10th–early 11th centuries (Fig. 8a), are also testimony to ethnic contacts. Beads of this kind were encountered, for example, in a female barrow burial from a cemetery near the village of Myakinino in the Krasnogorsk district of the Moscow province (Fig. 1; Table 5). The burial is dated to the 1st–mid–12th c. and the cemetery to the 12th–1st half of the 13th centuries. A synchronous settlement associated with the cemetery was situated some 200 m away from it (Éngovatova, Koval 2007, pp. 71, 72, 74, 75). Similar seed beads

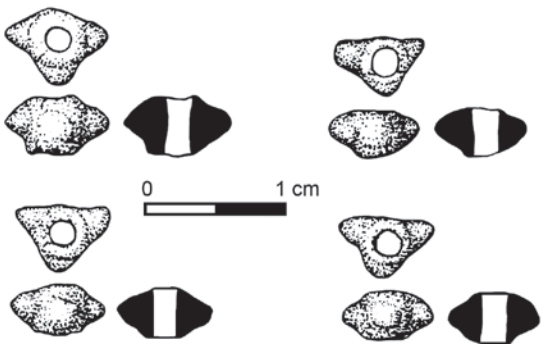

Fig. 7. Faience beads of the Timber Grave (Srubnaya) culture. The Ostrovnoi cemetery, barrow 3, burial 12 (Kalmykia)
After Shishlina *et al.*, Fig. 21:3

(Fig. 9; Table 5) were recovered from a female burial in a ground cemetery found in the Dmitrov kremlin in the Dmitrov district of the Moscow province (Fig. 1). The burial is dated to the late 12th c., and the cemetery to the late 12th–18th centuries (Éngovatova 2005, pp. 152–153).

As noted above, the influx of Near Eastern beads intended to be traded for furs was directed in the 10th–early 11th centuries to the areas of Rus which were rich in this commodity. The territory north of the Moscow province where the town of Dmitrov

Table 5. Optical emission spectral analysis data for seed beads of Near Eastern manufacture (754–34 from the Dmitrov kremlin [2002]; 774–29–31 from the Myakinino barrow cemetery in the Krasnogorsk district of the Moscow province [2004]*)

Reference number	754–34	774–29	774–30	774–31
Color	indigo	turquoise	turquoise	turquoise
SiO_2	base	base	base	base
Na_2O	19	18	19	17
K_2O	1.1	2.9	3.4	2.1
CaO	2.2	3.6	6.9	5.5
MgO	1.8	1.0	2.9	2.0
Al_2O_3	1.2	1.8	3.9	3.1
Fe_2O_3	1.0	1.9	2.3	1.9
MnO	0.03	0.4	0.6	0.4
TiO_2	0.07	0.1	0.2	0.09
PbO	–	2.8	2.0	5.0
SnO_2	–	1.0	1.0	1.0
CuO	–	3.0	2.1	1.6
CoO	0.2	–	–	–
Sb_2O_5	–	–	–	–
Ag_2O	–	–	–	–

* See the footnote to the Table 1.

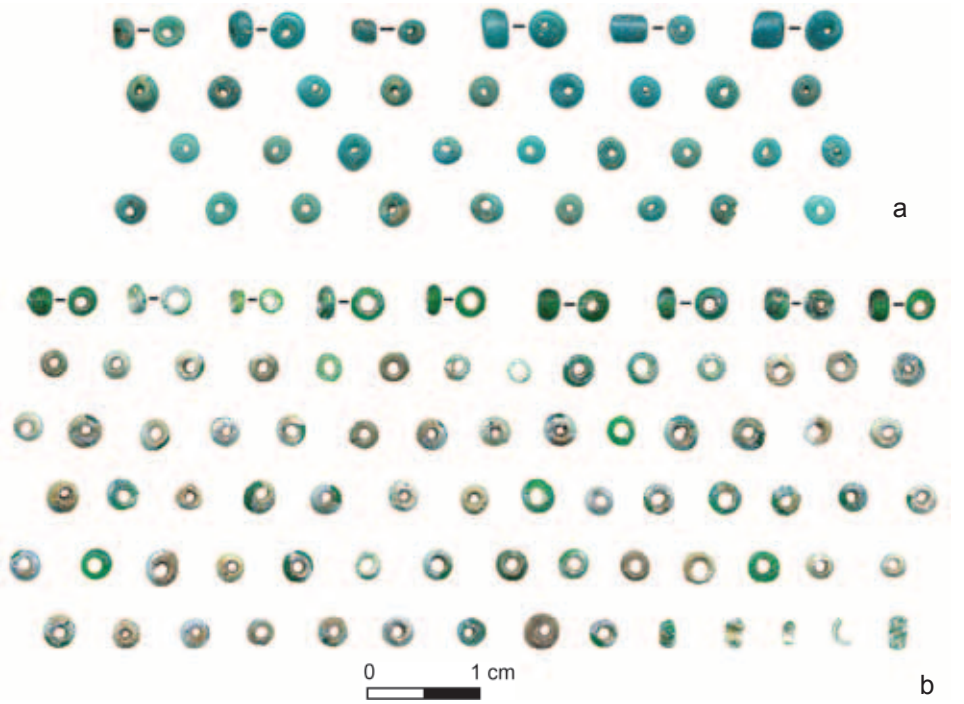

Fig. 8. Seed beads of Near Eastern and Byzantine origin from a burial of the 1st half–mid 12th c. under barrow 1 of the Myakinino barrow cemetery (Krasnogorsk district of the Moscow province).
a – beads of Near Eastern origin made of a drawn tube; b – beads of Byzantine origin made by winding.
After Stolyarova 2008, Fig. 1:1 (a), 1:2 (b)

and the barrow cemetery of Myakinino are situated does not belong to this region. Why then did the Near Eastern seed beads appear there? A study of the artifacts recovered from the Myakinino barrow cemetery and habitation site has shown the complexity of the settlement processes in this microregion. Its population was an amalgamation of the local Vyatichs of the Moskva river valley, who were a minority, and migrants from various regions of Rus. Slavs from the Upper Volga area and Northwestern Rus migrated there in the 1st half of the 12th c. and immigrants from South Russia from the mid-12th c. onwards (Éngovatova, Koval 2007, pp. 78–79).

The bead assemblage from the Myakinino burial containing Near Eastern seed beads is probably related to the first wave of settlers from the Upper Volga area and Northwestern Rus where Near Eastern beads were brought in large quantities in the 10th–11th centuries to be traded for furs. In the 11th c., these beads were superseded by Byzantine beads encountered in the Myakinino burial together with Near Eastern seed beads (Shchapova 1998, pp. 159–161). The Byzantine beads are either wound seed (Fig. 8b) or gold-glass beads (Fig. 2c). It is worth noting that the same burial yielded bracelet-shaped temple rings being, like gold-glass beads, ethnic markers of the Krivichs. Such a set of ornaments is indicative of the ethnic character of the burial and enables the buried woman to be identified as a Krivich.

Fig. 9. Seed beads of Near Eastern origin from a burial of the late-12th c. in a ground cemetery in the Dmitrov kremlin (Dmitrov district of the Moscow province).

After Stolyarova 2016, Fig. 3

Seed beads encountered in the Dmitrov burial may also be regarded as an indicator of migration. The latter is attested by physical anthropological data, i.e., dental system morphology of the inhabitants of Dmitrov as well as craniological characteristics showing evidence of South Slav or, more precisely, South European influence on the physical type of the Dmitrov population in this period (Éngovatova 2005, p. 156). The data are indicative of a mixed population in the early stages of the town, in the 12th–13th centuries, including a complex of southern origin, beside the local East Baltic and East Finnic components (Suvorova 2003, p. 32). It seems likely that the appearance of Near Eastern seed beads at Dmitrov was related to the presence of migrants from South Rus.

But here another point arises. How could seed beads survive in daily use for more than a hundred years after most of the beads of this kind had gone out of use? It is common knowledge that beads tend to outlive synchronous glass artifacts, such as vessels, arm rings, etc. It is all the more likely, if seed beads are used not for a necklace but to embroider a dress. For instance, an old textile inset embroidered with Near Eastern seed beads survived on the vestment of the metropolitan Alexis dated to the 14th c.[2]

In both the Myakinino and Dmitrov burials seed beads were located near the skull of the person buried. In the Myakinino barrow, beads were found to the right of the skull and near the lower jaw and under it. The excavators concluded that the beads had decorated a collar of the dress of the deceased (Zakharova 2009, p. 164, color insert Fig. XVI). In the Dmitrov burial, the beads lay between the skull and ribs of the skeleton, on an organic layer together with metal plaques featuring a rosette or a cross (Orfinskaya, Engovatova 2009, p. 13). A comprehensive study of the organic remains has shown that the person buried wore a garment with a stand-up silk collar on a beech-bark frame decorated with metal plaques with rows of seed beads between them (Orfinskaya, Engovatova 2009, pp. 13–14, Fig. 11). Thus, in both burials seed beads could have been used to embroider certain details of the costumes of the deceased, probably collars.

According to ethnographic data, the East Slavs were characterized by a funerary rite calling for the deceased to be buried in his or her wedding dress (Maslova 1984, p. 85). Mariya A. Saburova, citing Boris A. Rybakov, mentions the same custom

[2] I am grateful to Irina Kachanova for this information.

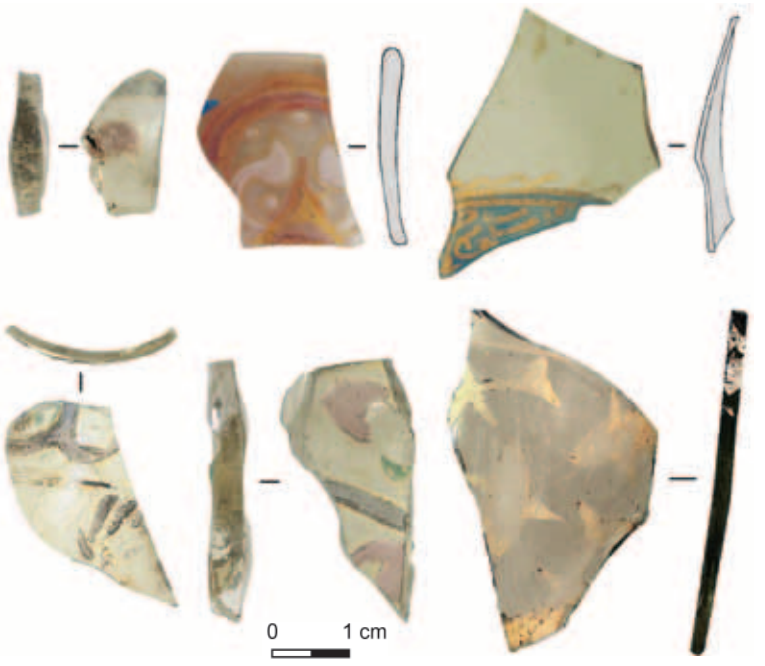

Fig. 10. Fragments of vessels of Near Eastern production from the pre-Mongol period from excavations in Yaroslavl (2006–2008, 2010).
After: Osipov, Faradzheva 2007, pp. 139: 1806, 149: 1951; Éngovatova 2008, Figs 163: 900, 170: 942; *eadem* 2009, p. 35: 218; *eadem* 2011, p. 45: 439

in Old Rus as well (Saburova 1988, p. 266). Traditional dress was customarily worn at weddings, the old-fashioned garments that had gone out of use believed to have apotropaic function. Such clothes were therefore often inherited or borrowed (Maslova 1984, pp. 13, 18, 35–36). It seems likely that the women buried in the Dmitrov and Myakinino cemeteries had received their funerary garments as wedding dresses from their mothers and the latter from theirs. It can be surmised that dresses were passed on in a long line of mothers to daughters as wedding costume and were used as funeral garments for married women who had died without daughters of their own to inherit these aged "reliques de famille".

GLASS AS MARKER OF INTERREGIONAL CULTURAL (RELIGIOUS) LINKS

Interregional cultural links are attested by finds of short-lived glassmaking workshops working in traditions alien to a given area. They were operated by itinerant craftsmen. For instance, workshops of the Byzantine period, such as that of the 6th c. at the Ilyich village on the Taman peninsula and two Kievan workshops of the 11th c., one near the St Sophia cathedral and another at the Lavra monastery

(Fig. 1; Shchapova 1998, pp. 41–44, 73–86), are testimony to religious contacts and the Christianization of these territories. Hence the range of artifacts found in these workshops includes tesserae, window glass, lamps and ritual tableware, first of all wine-glasses and bottles; these items were related to church architecture and interior furnishing, as well as cult, and were probably commissioned by the state and church. Tesserae were intended to decorate the interior of churches and to express Christian ideas. Lamps and window glass did not merely light up the inner space of churches, but had a symbolic spiritual value reflecting Christian views on light and its sources. Bottles as containers for liquids could have been used to hold unction and holy water. Wine glasses could have been used equally well for drinking as for the Eucharist. The lack of decoration implies a sacral function for such vessels. The very shape of a wine glass – a cup with a stem and a foot – is akin to that of the chalice, a metal goblet for the Eucharist of which it its a miniature replica. Wine glasses and chalices differed only in dimensions and material (Shchapova 1998, p. 52). It is known that glass chalices were in use as late as the early 3rd c. A.D., before Christianity was proclaimed the official religion, under Pope Zephyrinus (A.D. 202–219). They were widespread in the 5th–early 7th centuries (Shchapova 1998, p. 53). In this period, every layman in the Orient had such a vessel for Holy Communion at home. It can be surmised that during the Eucharist at church bread and wine were distributed to many cups so that every churchgoer had one. The large number of cups depicted on the walls of Roman catacombs implies this. Early liturgies are also indicative of the existence of many cups: „Turn your face to this bread and these cups" (the liturgy of St. Mark, 3–30). Glass cups for the Eucharist were prohibited officially from the 1st half of the 9th c. The first act pertinent to this was adopted by the council held in Reims in A.D. 803; it was followed by a ban issued by Pope Leo IV (A.D. 847–855; Shchapova 1998, p. 235). But even after these bans glass chalices existed; thus, M.V. Farmakovsky, citing A. Kisa, mentions a chalice from Nancy dated to the 2nd quarter of the 10th c. (A.D. 922–962; Farmakovsky 1922, pp. 97–98).

The Church made certain kinds of artifacts a vehicle for its ideas, thus augmenting their share in the volume of the output. The spread of these artifacts corresponds to the area covered by Christianization, while their chronological characteristic enables a more precise dating of this process. This gave rise to a new type of workshop with a mobility and limited range of products that enabled them to be compared with workshops that emerged on the sites of Roman military camps. The study of such workshops underlines the role of Christianity in the development of glassmaking (Shchapova 1998, pp. 52, 53, 55, 58).

GLASS AS MARKER OF INTERREGIONAL POLITICAL (DIPLOMATIC) LINKS

A comprehensive picture of cultural and economic links of Late Roman and Early Byzantine craftsmanship was painted by Yulia A. Likhter in her examination of glass artifacts from the territory of the Sîntana-de-Mureş/Chernyakhov culture

(3rd–4th centuries; Fig. 1; Likhter 1998). Three groups of imported glass artifacts were distinguished there. First came artifacts made from the simplest semi-finished items, i.e. rods, pancakes and mosaic plates subject to reheating. They were produced beyond the Imperial borders, but in areas under Imperial influence, probably in the North Pontic cities. The second group comprised standard artifacts made from liquid glass, i.e., vessels, window glass and ornaments, manufactured in small workshops in different regions, namely Egypt, Syria and Palestine, in the European provinces of the Roman Empire and possibly Italy. The third group included high-class artifacts shaped or decorated by cutting. They can be regarded as luxury goods. They were manufactured in big imperial workshops with a division of labor, located mainly in the capital, first Rome and then Constantinople, and probably in the most important provincial cities, such as Carnuntum, Vindobona (Vienna), Colonia Agrippina (Cologne) and Colonia Magna (Mainz) (Likhter 1998, p. 50).

The late 4th c. A.D. saw reduced economic contacts between the Eastern Roman Empire, i.e., Byzantium, and its neighbors north of the Danube owing to barbarian invasions and the Hunnic raids. This is attested by the Byzantine laws imposing restrictions on the export of goods and on payment for imported goods. The laws of A.D. 370–375 forbade the sale of wine, oil, and fishing delicacies to the barbarians. Under the law of A.D. 374 barbarians could not be paid in gold for their goods. Thus, from the late 4th c. the natural development of trade relations between eastern Europe and Byzantium was constrained by legislation and governed by policy. The government monopolized the manufacture of luxury goods. The scarcity of finds of expensive cut glass artifacts in the frontier zone at that time is circumstantial evidence for an embargo extended to prestigious glass artifacts. As for the well-known finds of cut vessels from the 2nd half of the 4th c. in the territory of the Sîntana-de-Mureș/Chernyakhov culture, they can be regarded as proof of diplomatic and political relations rather than trade. It would account not only for the sparseness of Late Roman and Byzantine artifacts beyond the imperial frontier and in eastern Europe, but also their relation to rich graves as well (Shchapova 1983, pp. 173–174). It seems likely that these prestigious goods made of high quality raw materials and with elaborate decoration were among the gifts made to Chernyakhov chieftains, while ordinary glass artifacts, i.e., tableware, lamps and window glasses, made in small workshops in various centers, and artifacts made from semi-finished products were sold continuously to the tribes of the Sîntana-de-Mureș/Chernyakhov region (Likhter 1987, c. 145).

GLASS AS MARKER OF INTERREGIONAL POLITICAL (DIPLOMATIC) OR CULTURAL (RELIGIOUS) LINKS

Engraved, enameled and painted with gold glasses from Byzantine and Near Eastern workshops, encountered in the territory of Old Rus in the pre-Mongol period, should be treated as diplomatic or personal gifts to high nobility. The most impressive collection of such artifacts was found in Western Rus, in the town of

Table 6. Optical emission spectral analysis data for glass vessels of Near Eastern manufacture from Yaroslavl (2006)*

Reference number	839–1	839–2
Color	colorless	colorless
SiO_2	base	base
Na_2O	14	15
K_2O	2.3	2.4
CaO	4.3	5.8
MgO	1.0	1.2
Al_2O_3	0.3	0.4
Fe_2O_3	0.03	0.03
MnO	0.3	0.4
TiO_2	0.06	0.07
PbO	–	–
SnO_2	–	–
CuO	–	–
CoO	–	–
Sb_2O_5	–	–
Ag_2O	–	–
NiO	–	–

* See the footnote to the Table 1.

Novogrudok (Fig. 1) in what is now Belarus (Gurevich *et al.* 1968). Examples include the well-known blue glass bottles with short neck bearing a bird image and various decorations, a purple-glass goblet showing birds, probably eagles in heraldic posture, a flask and a cup of white opaque glass with medallions and bird figurines, and a cup of colorless transparent glass decorated with oval scales. According to Shchapova, a vessel belonging to the class of so-called St Hedwig's goblets, decorated in the technique of high cutting and depicting a lion, a griffin and a stylized tree of life, is also of Byzantine manufacture (Shchapova 1998, pp. 199–205). These cut and painted vessels were luxury items produced in big governmental, maybe metropolitan, Byzantine workshops with labor division among the craftsmen. It implies that such artifacts were offered as gifts rather than traded. It is worth noting that Novogrudok, like the other Old Russian cities, did not yield any vessels of Byzantine manufacture decorated with the help of hot techniques. These were made in small private workshops and were distributed via the trade routes.

One should note among the vessels of Near Eastern origin from Novogrudok two identical goblets-tumblers of colorless transparent glass bearing an Arabic inscription and thrice-repeated octofoliate rosettes alternating with images of birds with spread wings (Gurevich *et al.* 1968, Pls VIII, IX). Similar vessels were excavated at

a rich estate in Vladimir (Fig. 1; Kuzina 2011, p. 92). Many fragments of at least eight Near Eastern vessels painted with enamel and gold were found at the Yaroslavl kremlin (Figs 1; 10; Table 6).

Finds of Near Eastern painted vessels being, like the Byzantine ones, luxury items in pre-Mongol occupation layers of Russian cities are extremely important as they are testimony of political, diplomatic, cultural and, probably, religious rather than trading contacts between Rus and the Islamic Near East. This conclusion is supported indirectly by the total absence of glasses painted in enamel and gold from the pre-Mongol cities of Volga Bulgaria (Fig. 1), where the largest quantities of Oriental goods, e.g. glazed pottery, glass and toreutics, in eastern Europe were amassed from the second half of the 12th c. (Valiulina 2015, p. 248).

It appears thus that glass artifacts are an important historical source revealing an intricate pattern of ancient and medieval commercial, political, cultural, religious and ethnic ties among the populations of eastern Europe.

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* The numbers in braclets denote the dates when excavations were conducted.

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