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# ECONOMIC GEOGRAPHY

## THE 'ROUTE FROM THE VARANGIANS TO THE GREEKS': TRUTH OR FICTION

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*The 'route from the Varangians to the Greeks' is widely known and often mentioned in research, popular science and educational literature. Much less often is it mentioned that the existence of the trade route is seriously doubted and needs additional evidence. The discussion about the actuality of a 'route from the Varangians to the Greeks' has intensified in the recent decade; it mostly involves historians who draw on chronicles, archive materials and literary sources. Although relevant geographical studies focus on small territories and have a limited scope, only they can give a definitive answer to the question of whether it was possible to sail the rivers of the East European Plain between the Baltic and Black Seas in the 8th-11TH centuries AD. Of particular importance are studies on the watersheds marking the principal legs of the route. If the watersheds were traversable, the 'route from the Varangians to the Greeks' was navigable, and the impassability of watersheds would preclude navigation along the route. Methodologically, the study employs methods and approaches used in physiographical field studies, which have not been applied earlier to the watershed sections of the 'route from the Varangians to the Greeks'. The central result of the research is the reconstruction of the hydrological features and hydrographic situation of the watershed between the basins of the Neva (River Lovat) and the Western Dvina (River Usvyacha) during the existence of the 'route from the Varangians to the Greeks'. This reconstruction and the study of the watershed territories, the system of land communication routes and toponymic features of this territory conclusively demonstrate that the 'way from the Varangians to the Greeks', or the Baltic-Black Sea waterway, could actually exist.*

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## Introduction

This study *aims* to describe the hydrological conditions and hydrographic features of the waterbodies in the watershed stretches of the route from the Varangians to the Greeks. This route is at the core of the semi-legendary narrative describing the emergence of Russian statehood. The first Russian state, Kiev Rus', is widely believed to be a composite of territories lining that route. Most sources agree that the artery began in the Baltic Sea, following the Neva River into Lake Ladoga, up the Rivers Volkhov and Lovat; from the River Lovat, the boats were portaged to the River Usvyacha, continuing up the River Usvyacha, the River Western Dvina and the River Kasplya; then, once again, the boats were hauled over land between the basis of the River Western Dvina and the River Dnieper to proceed through the River Katynka and the River Dnieper to the Black Sea.

The *focus* of this research is the watershed between the basins of the River Neva (the River Lovat), the River Western Dvina (the River Usvyacha and River Kasplya) and the River Dnieper (the River Katyn). Emphasis is placed on the Usvyaty portage, which presumably linked the River Lovat and the River Usvyacha, as it is the principal watershed section of the route (FIG…).

This study has *relevance* as a contribution to discussions centring on the possibility of a route 'from the Varangians to the Greeks and the challenges of navigating it. The question as to the existence of the route has both a scientific and a 'worldview' angle since it is closely linked to the emergence of Eastern Slavic peoples. The existence of a route binding the Slavic lands of the East European plain means that the Russians, the Ukrainians and the Belarusians shared a common origin in the initial stage of their histories. If the route did not exist, the ethnogenesis of these three peoples occurred independently.

## Literature review

Both the opponents and proponents of a route from the Varangians to the Greeks draw on chronicles and literature, invoking toponyms mentioned in these sources to support their positions. Since these sources are copious, a 'proper' selection thereof can easily provide one with sufficient evidence to argue his or her position. For example, Dr Polina Fedotova writes: 'The unceasing, dogged attempts to prove the existence of the Scandinavian-Greek route, which was thought up by historians, take science further away from the exploration of the actual trade and transport routes that ran across Eastern Europe in antiquity' [1]. It is maintained in the abstract of the cited article that '[n]ever was there a water-land trade route from Scandinavia to Byzantium, passing through Eastern Europe. This route is a deliberate invention of Normanist historians'. In a more comprehensive contribution published in 2020 in the 'paid-for' e-journal *The Eurasian Union of Scientists*, she criticises the idea of a route from the Varangians to the Greeks even more severely [2]. However, as the text suggests, the cavilling researcher, who is a specialist in philosophy, did not investigate the supposed course of the route even vicariously, building on historical documents and earlier works on the topic.

The denial of the route's existence makes it impossible to explain why the first Russian towns (Ladoga, Veliky Novgorod, Polotsk, Gnezdov, Kiev, etc.) lined its supposed course. Moreover, it becomes completely unclear why Prince Oleg seized Kiev in 882 BC and moved the capital of his state there [3]: if there had been no connection between Novgorod and Kiev, this relocation would have been both impossible and unreasonable.

Irina Konovalova and Elena Melnikova, the authors of the voluminous work on the historical geography of early medieval routes in Eastern Europe, *Ancient Rus in the system of Eurasian communications of the 9th—10th centuries*, do not mention a route from the Varangians to the Greeks in the first part of their study ('The formation of a network of Eurasian communications in the 8th—10th centuries'). Yet, in the section dedicated to a Western Dvina route, distinguished by the authors of the book, they argue: 'there are distinctive early links between the Vitebsk Dvina and the Baltic-Volga route (and late the Dnieper route as well)' [4, p. 106]. But the 'early links' between the basin of the River Western Dvina and the Baltic-Volga route, which were possible chiefly through the Rivers Usvyacha and Lovat, and the later ones between the River Western Dvina and the River Dnieper basins constitute the 'canonical' route from the Varangians to the Greeks. But the authors never name it this way. The second part of the book titled 'The Eurasian system of communications on mental maps' describes a route 'from the Varangians to the Greeks' in great detail.

Naturally, the 'route from the Varangians to the Greeks' is a name by convention; it does not imply that only the Varangians and the Greeks navigated the route. Moreover, the word 'Varangians' dates back to the 11th century [5—7], when the legendary route had lost much of its significance; the 8th—10th century sources use the words *Ros* and *Rus* to refer to those Scandinavian peoples. The East Slavic, Finnish and Baltic tribes, through whose lands the route passed, were neither the Varangians, nor the Greeks. But it was these tribes for whom the route was of the greatest importance. As a consequence, the familiar objection of the deniers of a route 'from the Varangians to the Greeks' that there is very little Varangian and almost nothing Greek on the route cannot be accepted as a conclusive proof of the non-existence of such a route. Sufficient evidence is the traces of contacts between the locals and the travellers, located along the route [8]. Archaeological finds testifying to the broad scope of the early medieval European system of trade and economic ties are being discovered increasingly often. For instance, in 2022, a significant part of walrus bone products found during the excavations of early medieval Kiev was traced to Greenland [9].

Yoking together the route from the Varangians to the Greeks with the 'invitation of the Varangians', as is often done, is completely unfounded: no primary sources associate the invitation of the Varangians with the route; both terms appeared centuries after Rurik's reign and the time when the route was a principal trade artery. The link between the two phenomena was established by historians themselves, who ignited a fierce Normanist/anti-Normanist discussion around this entirely fictional connection.

The most influential historical-geographical work naming the route a principal factor in the emergence of the first Russian state, Kievan Rus, is the limited-circulation book by Viktor Paranin *The historical geography of chronicled Rus,*

published in 1990 in Petrozavodsk and, funded by the authors. Today, hard copies of the work are a comparative rarity [10]. Although not all the arguments put forward by Paranin are compelling, he has provided a detailed description of the river routes that stimulated the emergence of Kievan Rus, including the route from the Varangians to the Greeks.

The exploration of the route from the Varangians to the Greeks has been led by historians rather than geographers. The existence of such a route is not questioned by Valentina Goryunova, a prominent figure in the archaeological excavation of Gorodok-on-Lovat, a stronghold in the upper reaches of the river. If the route from the Varangians to the Greeks had never existed, there would have been very few reasons to found Gorodok-on-Lovat, the precursor of town Velikiye Luki. The finds of the excavations in Gorodok-on-Lovat suggest that the route was abandoned in the early 11$^{th}$ century AD [11]. Until then, Goryunova emphasises that Gorodok-on-Lovat was a centre for trade and crafts. Having survived a major conflagration, it became a feudal stronghold, as which it existed until the 13$^{th}$ century. The successor town of Velikiye Luki was established later as a Novgorodian stronghold marking the border between the Novgorod and Polotsk (and later Lithuanian) lands.

At about the same time, in the late 10$^{th}$ — early 11$^{th}$ century AD, Kievan Rus began to split into smaller states. This fragmentation is another argument in support of the dwindling of the political and economic ties holding together the route from the Varangians to the Greeks. The Duchy of Polotsk emerged as a result in the basin of the River Western Dvina [12].

The route from the Varangians to the Greeks is identified by the Belarusian scholar Yakov Rier as the spatial backbone of early medieval Russian statehood [13]. The Ukrainian historian Sergey Khvedchenia scrutinises the performance of the route within the boundaries of what was to become Ukraine [14]. The route and its effect on the development of the Russian lands and Nordic countries have been the focus of much investigation by international researchers [15 — 18].

The literature proposes various 'models' of the route based on a purposeful selection of sources. The results of applying these 'models' might come as a surprise. For example, Aleksandr Miklyaev maintains that the route did exist but was navigated only in winter [19]. Yet he does not explicate how the travellers dressed, where they spent nights, and what they ate whilst following the route in winter across the sparsely populated north-west of today's Russia.

Travelling the route from the Varangians to the Greeks in kayaks, small rowing or motor boats and copies of vessels operated at the time of the route (see [20], [21]) cannot prove its existence. Unfortunately, these exciting sporting events are not conducive to answering the question as to whether a route from the Varangians to the Greeks existed: these re-enactments were carried out in modern hydrological and hydrographic conditions, which differ from those in place a thousand years ago. None of the expeditions conquering the route managed to traverse the watershed sections by portaging the boats or at least the cargo. The boats, cargo and people were usually transported by cars, which deprives the expeditions of any scientific value.

The archaeological investigations on sites adjoining the rivers that were part of the route from the Varangians to the Greeks can provide valuable information

about the people and tribes who lived there hundreds and thousands years ago but says very little whether navigating the route was altogether possible. Archaeologists concentrate on objects located on land, paying much less attention to those relating to waterbodies (rivers, lakes and even mires). The situation reverses only when the water level falls so much as to reveal silts, and objects on the bed of the lake become visible (in the study region, such works were carried out at Lake Sennitsa[1]). This conclusion about earlier research is buttressed by the fact that the maps showing the archaeological finds reproduce the features of the modern hydrographic network (see, for example, [22]). But, in the time of the route, the network was obviously different, partly resembling that of today, partly completely different. This dissimilarity is explained by the influence of the climate factors, which archaeologists try to take into account to the best of their potential, and by tectonic phenomena, including isostasy, which archaeologists usually ignore.

Although geoecological field studies were carried out at some stretches of the route [23], they centred on the current state of the waterbodies and adjacent land areas.

Therefore, answering the question of whether a route from the Varangians to the Greeks really existed requires palaeogeographical studies. Such investigations, conducted at selected sections of the route from the Varangians to the Greeks, covered small sites, particularly, in the lower reaches of the Msta River [22].

Modern methods of physiographical field studies yield entirely new results compared to those obtained using the methods of the 1990s. And the most significant effect would be achieved in the watershed sections — the sites of portage stretches, which were major nodes on the routes connecting rivers of different basins [24]. Whichever model of the route from the Varangians to the Greeks is accepted, the central problem is that of the watersheds, particularly of the divide between the River Lovat and the River Usvyacha.

Such a study cannot establish whether a route passed through the examined watersheds, but it can prove whether such a route was altogether possible. If portaging was possible, researchers in other disciplines should pay attention to these stretches most likely used for transporting vessels, people and cargoes. If it is established that the watershed section was insurmountable a thousand years ago, the possibility of a route should not be considered at all.

## Methodology and methods

The field method was central to this study. Sediment core composed by gyttja and silty clay were obtained from four lakes located in the watershed area between the Rivers Lovat and Usvyacha (Lakes Siverst, Ordosno, Usvyatskoe), and the Rivers Kasplya and Katynka (Lake Kasplya) (Fig. 1).

[1] Underwater and land investigations at Lake Sennitsa in the Pskov region. Source: https://fond.historyrussia.org/arkheologicheskie-ekspeditsii-i-issledovaniya/podvodnye-i-nazemnye-issledovaniya-na-ozere-sennitsa-v-pskovskoj-oblasti.html (accessed 17.05.2022)

Bathymetry was performed on all the lakes; the data obtained were at odds with those found in various sources, including scholarly publications. An aerial survey of Lake Usvaytskoe and the adjacent territory was carried out using a drone in autumn and winter. The lake depression was studied with a ground-penetrating radar. Whilst studying the possible ways to traverse the watershed between the River Lovat and the basin of the River Usvyacha (Lake Uzhanye). Once again, there were serious discrepancies between the actual situation and descriptions provided in the literature, including the sources claiming to present the results of field studies. The valley of the River Usvaycha was explored from Lake Usvyatskoe (the Pskov region, Russia) to its influx into the River Western Dvina near the village of Surazh (the Vitebsk region, Belarus). Local toponymy was studied as well, along with the ekistic characteristics of selected settlements.

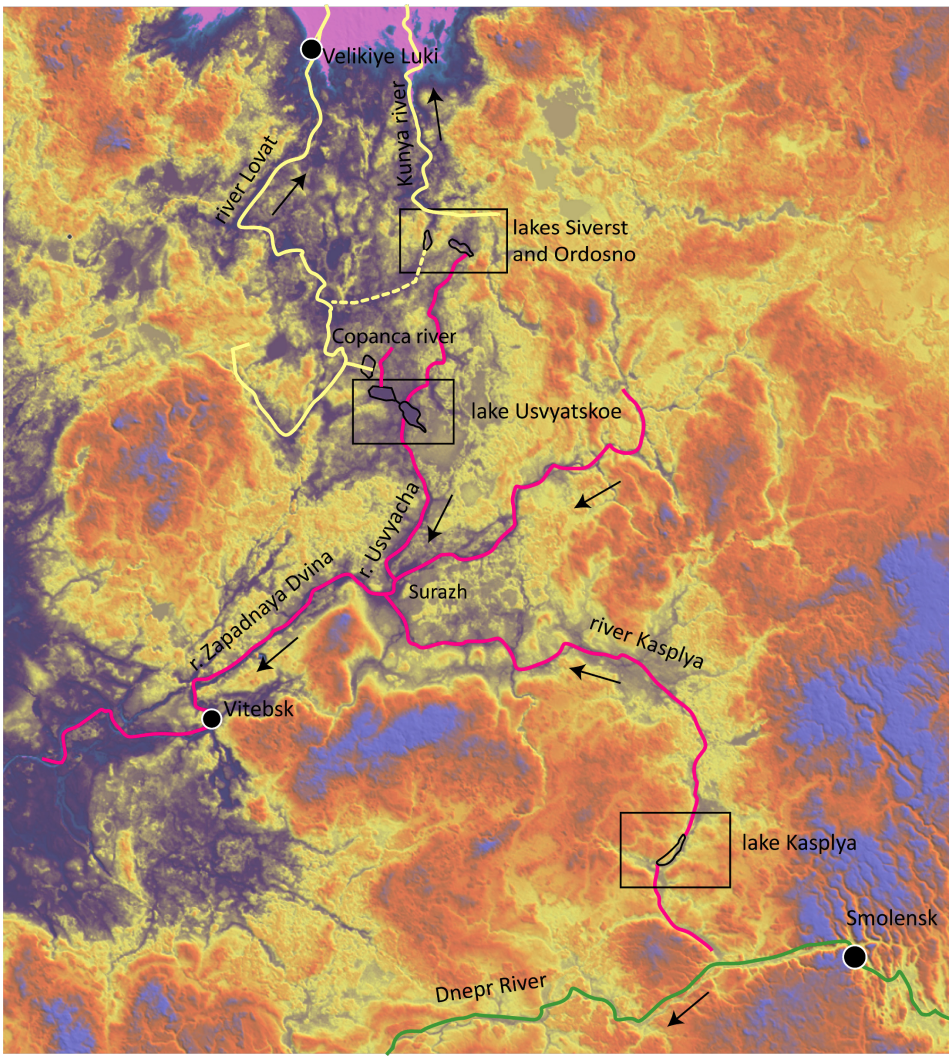



Fig. 1. A topological map of the study area

Analytical methods were employed to examine the lake sediment samples collected during the expeditions. The data obtained are sufficient to describe and generally systematise the information gleaned in the field.

## Results

*Lake sediments*. A preliminary analysis of the lake sediments collected from Lakes Siverst, Ordosno, Usvyatskoe and Kasplya has shown that all these lakes are of glacial origin. They formed as the Valdai (Weischelian) Glaciation receded about 20,000 years ago. The terrain of the watershed areas is largely a product of fluvioglacial processes at the edge of the maximum extent of the Valdai Glaciation; the distinctiveness of the Neva-Western Dvina watershed is due to this factor. For tens of kilometres, the River Lovat and the River Usvyacha flow parallel to each other but in different directions. The drainage divide between the two rivers consists of an alternation of small raised bogs and gentle sandy uplands stretching from north to south.

These lakes have existed throughout the Holocene. The periglacial conditions were superseded by lacustrine conditions observed to this day. The lakes have never been dry in the Holocene, their water-levels have fluctuated considerably. Neither alluvial nor peaty deposits, which are indicative of river transformations and lakes running dry, have been found in any of the study lakes (Fig. 2)


Fig. 2. The transformation of limno-glacial deposits (grayish) into lacustrine (brownish) in a sediment core from Lake Ordosno, July 2021

All the study waterbodies are U-shaped drainage lakes, their bottoms slanting gently at the shore and then sloping steeply to the depth of 2.5 m. The central parts of the kettles are flat and smooth in Lakes Ordosno and Siverst. Lake Kasplya has depression up to 9 m deep, most probably accounted for by the anthropogenic impact of the 20th century, namely the hydroelectric power plant (built in the 1950s, it is idle today). The maximum depth of Lake Usvyatskoe is 1.4 m (the reference literature, however, says that the lake is 3.6 m deep). It also has the thickest silt layer amongst the study lakes (upwards of 9 m) (Fig. 3).

Fig. 3. A sediment core from Lake Usvyatskoe, July 2021

It is difficult to measure the thickness of the layer more accurately since the length of the drill available to the expedition was not sufficient. The extreme thickness of the layer is due to Lake Usvyatskoe having the largest drainage basin of all the study waterbodies. The shores of the lake and the banks of its tributaries are home to many settlements, quite populous for the area, including the centre of the district — the village of Usvyaty.

*Hydrology and hydrography.* The most considerable water level fluctuations were registered in Lake Usvyatskoe. By study of lake sediments, interpreting the aerial survey photo- graphs and analysing the shore relief, one can conclude that, when the lake was at its maximum level, it incorporated more northerly Lake Uzmen and the areas adjoining the start of the Usvyacha River (Fig. 4).


Fig. 4. The shoreline of Lake Usvyatskoe in the time of the route from the Varangians to the Greeks and today

*Legend: 1* — the modern shoreline of Lakes Usvyatskoe and Uzmen (145 m according to the Baltic Height System); *2* — the shoreline of 'greater' Lake Usvyatskoe in the time of route from the Varangians to the Greeks (147 m according to the Baltic Height System); *3* — the modern course of the Usvyacha River

The rate of silt thickness increase, which is 0.2—0.4 mm per year in this area, suggests that the depth of Lake Usvyatskoe was about 1.6 m one thousand years ago. If the level of the lake was at least 1 m above the current one (the difference was probably more significant), the average depth of 'greater' Lake Usvyatskoe (today's Lakes Usvyatskoe and Uzmen and the floodplain adjoining the lake from the south) was about 2.5 m, which would be sufficient for any riverboat of the time.

The Usvyacha River, having passed through Lake Usvyatskoe, flows down a poorly developed valley flanked by few terraces (Fig. 5).

*a*

*b*

Fig. 5. The Usvyacha flows from Lake Usvyatskoe: *a* — September 2021, low water; *b* — May 2022, high water

The valley of the Usvyacha between Lake Usvyatskoe and the influx into the Western Dvina has a variable terrain: up to the village of Novosyolki, the river follows a young, poorly developed valley; then, it continues down an ancient fluvioglacial valley. Despite the widening of the valley, the depth of the cut is insignificant, and the shape of the valley's cross-section remains almost the same throughout the course of the river. It is therefore likely that the hydrological

conditions of the river have not changed substantially. Although some parts of the river valley strongly meander, there are few oxbow lakes — only one was discovered between Lake Usvyatskoe and the Western Dvina. This leads one to conclude that the Usvvyacha of today is the same river it was a thousand years ago (Fig. 6).

Fig. 6. The valley of the Usvyacha between
the village of Lukashenki and Pristan,
the Usvyaty district of the Pskov region, May 2022

Therefore, the hypothesis that the route from the Varangians to the Greeks was abandoned because the heads of the rivers comprising it had run dry seems unlikely. The fairway depth of today's Usvyacha, as the measurements conducted in May 2002 suggest, exceeds one meter. The width of the river is such that fallen trees, a familiar obstacle to the navigation of the smaller rivers of Russia's northwest, do not block it even halfway and leave sufficient room for boats. But if we assume that the valley of the Usvyacha was about the same in the time of the route from the Varangians to the Greeks as it is today, it would have been impossible to make a towpath for boats to be transported by human pullers or horses. Rowing or sailing against the current is very difficult here during floods because of the fast-flowing current (Fig. 7).

Fig. 7. The valley of the Usvyacha River,
the Vitebsk district Belarus, May 2022

It can be safely assumed that, regardless of its name, the impact of the waterway on human occupation was sporadic in the watershed area, and the Usvyacha between Lake Usvyatskoe and the River Western Dvina could not support the economic life on its banks a thousand years ago. Where the rivers were the main thoroughfares, like it was in the environs of the Svir, villages built their houses facing the river. But all the villages on both the Russian and Belarusian sides of the Usvyacha River have their yards and gardens facing the river, whilst the riverbanks are generally used for garbage disposal. On the Russian side of the Usvyacha, there is a village called Pristan (the Russian for 'pier'), which has no pier. The names of the other villages have nothing to do with the river.

One can suppose that the present road running along the western shore of Lake Usvyatskoe and the Usvyacha appeared either simultaneously with the route from the Varangians to the Greeks or near that time. The settlements lining the lake emerged originally on the upland in its central part, known today as Yuryevy Gory. When the water level was higher, the area where the village of Usvyaty is today was heavily waterlogged. A dropped water level made it possible to erect a bridge over the channel between Lakes Uzmen and Usvyatskoe and build a road running east to west between Nevel and Velizh. Today's location of the village of Usvyaty is a result of gravitation to the road. The archaeologist

Ivan Yeremeev emphasises that the relocation of the settlement occurred 'before the beginning of the 16th century, long before the Muscovite fortress was founded there' [25, p. 337].

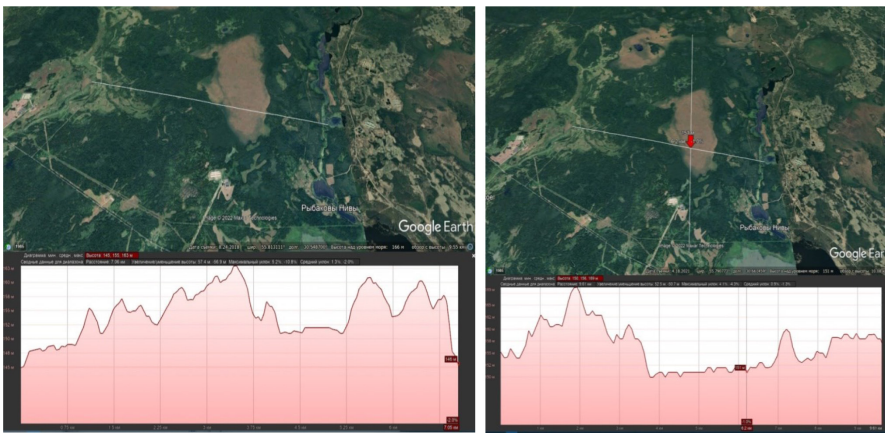
If the water level or configuration of Lake Usvyatskoe had not changed by the time, the settlement would not have been relocated, and the fortress would have been built on Yuryev Gory: the main road running from Surazh via Usvyaty northwards to Velikye Luki (it was mentioned in the Novgorod birch-bark manuscripts), skirted the western shore of the lake at least until the Livonian war [26].

*Watershed landscapes*. The portage between the River Lovat and Lake Uzhanye (the basin of the Usvyacha) has been described in many sources, most of which are meant for tourists. These descriptions, however, are often wide of the mark. Lev Plechko writes in his book *Ancient waterways* that 'the portage from the Lovat to Lake Uzhanskoe ran across the watershed mire of Volochinsky Mokh. It is drained by several streams flowing into the Lovat and the lake. The largest stream empties into the Lovat near the village of Prudy. A smaller stream flows into Lake Uzhanskoe north of the village Prudishchi. The heads of these streams are linked by a chain of water holes and a strip of bulrush stretching along the bottom of a moor, resembling an old overgrown channel, which is 2 km long, 6—8 m wide and up to 1.5 m deep. <…> The surface of Lake Uzhanskoe is only 3 m above the level of the Lovat; a 10 km portage (this is the total length of the stream and the Kopanka River), given a 3 m water level difference, is a likely element of the route from the Varangians to the Greeks' [27]. Apparently, the author of the book has never visited the drainage divide and thus reports fantastic facts about 'several streams' draining Volochinsky Mokh. There are no such streams in the area (Fig. 8).

Fig. 8. Volochinsky Mokh Mire, May 2022

Unfortunately, this inaccurate information acquired from Plechko's book is repeated by participants in the school expedition The Route from the Varangians to the Greeks as Seen by a Teacher of Geography, carried out in 2018 with support from the Russian Geographical Society. The expedition claims to have studied the drainage divide: 'The expedition focused on the portage between the Usvyacha (the basin of the Western Dvina) and the Lovat (the basin of the Neva). At the turn of the second millennium, these two rivers were connected by the Kopanka canal. <…> Today, the Kopanka is a ditch (or a stream in most of its stretches), 1—6 m wide and 0.5—1.5 m deep, with difficult, steep or low waterlogged banks, a swampy bed and muddy-smelling brown water. The walking part of the route along the Kopanka (about 10 km long) is described in detail in the expedition report. At both ends of the canal, there are large 9$^{th}$—10$^{th}$ century strongholds: Yuryeva Gora on the Usvyacha and Gorodok-on-Lovat'[2].

The distance between the Lovat and Lake Uzhanye is about 7 km, rather than 10 km, as the report says. For a walking expedition on a difficult ground, three kilometres make a significant difference. Having actually walked the route, one cannot make such a serious mistake. Fig. 9 shows the north-south and east-west cross-sections of the supposed portage route.




*a* *b*

Fig. 9. Cross-sections of the Uskvyatsky portage: *a* east-west; *b* north-south. Prepared by the authors based on Google Earth data

The water level of the Lovat along the portage route and near Lake Uzhanye is almost the same: 146 and 145 m respectively. But to move between the two river systems over Volochinsky Mokh Mire, one has to ascend to the level of 163 m and descend 18 rather than 3 m. But what is more important is that there are no traces of a 6 m wide and 0.5—1.5 m deep canal, which is described in the expe-

[2] First expedition completed, supported by Russian Geographical Society. Source: http://smolenskkraeved.ru/novosty/news_post/zavershilas-pervaya-ekspeditsiya-v-ramkakh-granta-rgo (accessed 17.05.2022).

dition report and Plechko's book. The Kopnaka, which is a river, not a canal, is marked on maps, and it actually exists. In effect, there are two unconnected rivers sharing the same name: one empties into the Lovat, the other into Lake Uzhanye. In their lower reaches, both Kopankas have a width of about 50 cm, and their depths are about the same. The Kopanka flowing into the Lovat continues as a narrower and shallower ditch (Fig. 10).

*a*

*b*

*c*

Fig. 10. The lower reaches of the Kopanka before emptying into the Lovat (*a*); the lower reaches of the Kopanka before emptying into Lake Uzhanye (*b*); the Kopanka ditch. May 2022; photographed by the authors (*c*)

Neither Kopanka has 'steep' banks or is 6 m wide in any of its stretches. The Kopanka flowing into the basin of the Usvyacha never reaches the Yuryevy Gory stronghold on Lake Usvyatskoe since it empties into Lake Uzhanye, which is some distance to the north of Lake Usvyatskoe. There was apparently a road linking the portage to the town of Yuryevy Gory (the traces of such a road are noticeable today), but a Kopanka canal has never existed: it is utterly impossible.

The Kopanka ditch, as its current condition and appearance suggest, was most probably dug for transporting cargoes between the basins in the 18$^{th}$—19$^{th}$ centuries. Such ditches connecting watersheds are a common sight in the north-west of today's Russia. Yeremeev dates the Kopanka ditch to the 16$^{th}$—17$^{th}$ centuries, identifying it as a drainage structure [25]. Yet, digging a single drainage ditch would have been unreasonable, and there are no other ditches in the area. But whatever the Kopanka is, it is obviously centuries younger than the route from the Varangians to the Greeks and has no bearing on it.

One can only regret that the teachers and pupils who took part in the 2018 expedition probably never reached the watershed between the Rivers Lovat and Usvyacha, and the information they present in their report as obtained on their own is in fact borrowed. Yet, none of this means that this watershed section is insurmountable.

The Lovat-Usvyacha watershed upland bordering the mire to the south and north is now a pine-birch forest on sandy soil; it takes little effort to traverse it. Watershed uplands overgrown with coniferous forests are not particularly susceptible to erosion and denudation. Thus, one can reasonably assume that the uplands of the Lovat-Usvyacha watershed existed a thousand years ago as well (Fig. 11).

If people and goods were transported via this portage, and the ships stayed in their basins, the seven-kilometre route through a pine forest was easy to cover. The abundant forests of the watershed area provided material for new vessels after each portage. In later periods, from which reliable sources survived, portages were used this way: the vessels remained where they were, and the cargoes were hauled overland to be loaded onto other boats. But it is also possible that vessels were transported as well, especially if they were the likes of Novgorodian *ushkuis* made from pine, which were first mentioned in written sources in the early 11$^{th}$ century when the route from the Varangians to the Greeks was enjoying its last decades. Konstantin Averyanov writes that, in the 11$^{th}$ century, the maximum speed reached by boats travelling the rivers of the East European plain was 150 km [28], which was possible only when using *ushkuis* — the fastest river boats of the Russian early Middle Ages.

Fig. 11. The watershed uplands between the Lovat River and Lake Uzhanye, May 2022

*Toponymy.* The names of two villages are worthy of attention. One is situated near the influx of the Kopanka into the Lovat; the other is into Lake Uzhanye.

The first one is called Prud (the Russian for ‘pond’), and the other Prudische (‘large pond’), both almost desolate. Although ascertaining the age of the village is difficult, it is possible that there was a dam in their vicinity, spanning both Kopankas. Erecting such a structure on such small rivers would not be daunting. Boats were hauled over the flooded valleys of the two rivers, with the flooded area including parts of Volochinsky Mokh Mire, where the Kopanka ditch was dug centuries later. But, perhaps, there is no direct connection. The solid fact is that traversing the mire is impossible.

The toponym ‘Prud’ may also derive from the fact that the Kopanka, which flows into the Lovat, widens in the area, forming something akin to a pond or a pool, and then sharply narrows. This study was unable to establish what ‘holds’ the river at that place.

There are obvious difficulties in establishing whether the toponymy of the area, which was plagued by war from the disintegration of Kievan Rus in the early 11$^{th}$ century until the ‘Perpetual Peace’ between the Polish-Lithuanian Commonwealth and the Tsardom of Russia, preserved any features dating to the time of the route from the Varangians to the Greeks. Yet there is another village, Ladogi, whose name attracts attention (Fig. 12).


Fig. 12. A modern village sign, the village of Ladogi,
the Usvyaty district of the Pskov region

This name may derive from the Swedish *ladugård* (barn). In Stockholm, there is a district on the sea coast, called *Ladugårdsgärdet* (barn's field). The district to the west, *Östermalm*, was called *Ladugårdslandet* (barn land) until the 17th century. In Russian, the word *ambar* (barn) was used to refer not only to barns proper but also to warehouses. In West Siberia in the 17th century, there was the trade town of Mangazeya located in the watershed area between the Ob and the Yenisey. In the Siberian dialect of Russian, the word *Mangazeya* means 'public barn' (a barn built at a distance from the village for storing food supplies to be used in case of famine or fire).

Probably, the name of Lake Ladoga also came from the same root since the generally accepted transformation from the Finnish *Alode-jogi* ('river of the lowlands') through the early Swedish *Aldeigjborg* to *Ladoga* [29] seems unconvincing: the Swedes never derived toponyms from Finnish names; it happened the other way round. But Ladoga coming from *ladugård* seems plausible: it was more logical to build the 'barns' not on the Volkhov directly, but at a distance, on the bank of the river, which was called Ladozhka and gave its name to the lake. The village of Ladogi is also located away from the main artery of the time, the Usvyacha, but quite close to it. The first name of Lake Ladoga mentioned in Russian sources is *Nevo*. We believe that it is of Slavic origin, coming from the word *mewa* (seagull), as it appears in Polish, which has preserved many archaic Slavic forms [30]. In Russian popular speech, the sound 'm' is easily replaced by 'n', which might have happened in this case as well, giving the name to the lake and the Neva River. Further work and the expertise of professional philologists are required to investigate the toponymy of the route from the Varangians to the Greeks, including its watershed part.

## Conclusions

1. The analysis of silt from the watershed lakes between the basins of the Neva and the Western Dvina (the Lovat and the Usvyacha), and between the River Western Dvina and the River Dnieper (its tributaries the River Kasplya and the River Katynka recpectively) has sown that these lakes have existed uninterruptedly since the post-glacial period. Although their water levels have fluctuated, the lakes have never run dry or turned into mires and rivers.

2. The major lake of the watershed area, Usvyatskoe, was wider and deeper a thousand years ago than it is today. It was navigable by any vessel of the time. The first settlements appeared on its western shore: it is much higher than the eastern one, and, at the time, it was apparently difficult to cross the lake. The settlement moved from the western to the eastern shore, where it is now, after the lowering of the water level, which happened no earlier than the 16th century.

The reason for it might have been the construction of a road between the towns of Nevel and Velizh — the then important economic centres and military strongholds.

3. The poor development of the valley of the Usvyacha indicates that the river has retained its hydrological features through the centuries since the route from the Varangians to the Greeks. There have been no significant changes in its total flow: it has neither diminished (which is sometimes cited as the reason for the disappearance of the route), nor increased. The influence of the river on settlement and economic development in the adjoining territory was insignificant and short-lived on a historical scale: the settlements lining the banks face the roads rather than the river.

4. The information about the Lovat-Usvyacha watershed available from various sources, including those supposedly based on field studies, is often wide of the mark. The actual length of the portage running through the watershed was not the alleged 10 km but 7 km. Yet the height difference was more substantial: 18 rather than 3 m. There were no connecting waterways between the river basins in the time of the route. The current state of the Kopanka suggests that it was dug hundreds of years later for local purposes. However, traversing the watershed over land, following a road running through dry sandy pine forest, was not an arduous journey, even if the light river boats used at the time (like *ushkuis*) were portaged as well.

5. The toponymic analysis of the watershed area in the vicinity of the Usvyaty portage points to a few links between the local settlements and the distant river ways, which used to pass there.

6. Further work is required for more reliable and accurate conclusions.

7. The hydrological and hydrographic conditions, the watershed landscape features and the toponymy in the main stretches of the route, which were studied by the authors during the 2021—2022 expedition, are perfectly consistent with the existence of such a route. The challenges travellers had to overcome were comparable with the trials one faced when using similar ways in Western Europe. The only difference was that Western Europe was incessantly at war in the $5^{th}$— $10^{th}$ centuries AD, and Eastern Europe was sparsely populated and thus relatively safe at the time. As Konovalova and Melnikov cogently argue in the concluding part of their book *Ancient Rus in the system of Eurasian communications of the $9^{th}$— $10^{th}$ centuries*: 'The presented materials [the materials of the book]… testify to the presence of strong commercial ties binding together the Trans-Baltic region. The region existed in the $8^{th}$—$10^{th}$ centuries … thanks to the geopolitical situation, which had developed in Europe in the previous centuries and determined the sociopolitical evolution of the peoples living in the area' [4, p. 234].

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