

## OUTLINE OF THE HISTORY OF RUSSIAN CARTOGRAPHY

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### 1. INTRODUCTION

In 1737, a renowned Russian historian and geographer, Vasilii Nikitich Tatishchev, in his *Proposals on Russian History and Geography* addressed to the Academy of Sciences clearly defined the interrelation between these two disciplines:

History can describe the deeds and words of men; but where, in what situation and at what distance all these took place, what natural phenomena affected the performance of those deeds, where certain peoples used to live and live now, what former cities are now called and where they are located, are told by geography and maps; and history, spoken accounts, and writings cannot fully satisfy our quest for knowledge without a geography of the land.<sup>1</sup>

This statement describes the important role of maps as the main language of geography. It is a language which expresses man's perception of his environment, and it is the earliest form of writing as a means of arraying information about the expanse we live in. The first examples of this were cartographic drawings in caves and on rock faces in the Bronze Age. These most basic drawings were used widely by the inhabitants of America, North-Eastern Asia, and islands of the Pacific Ocean, who were primeval and illiterate when discovered by Europeans.<sup>2</sup> These early cartographic representations, however diverse they were, had at least four key purposes: (1) to enable people to find their way and to represent natural and man-made routes; (2) to show the boundaries between private land holdings and, later, between tribes and early state frontiers; (3) to depict fortresses and urbanized territories or settlements; and (4) to represent graphically, sometimes by cartographic declaration, the territories of states as a whole. In addition to these four practical purposes, early peoples also developed general, conceptual cartography, which constituted an integral part of their cosmography and understanding of the world.

In Old Russia these four types of practical cartography developed rela-

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1 Cited by D.M. Lebedev, *Geografiya v Rossii petrovskogo vremeni* (Moscow-Leningrad, 1950), p. 316.

2 For more on this see: A.V. Postnikov, *Razvitie kartografii i voprosy ispol'zovaniya starykh kart* (Moscow, 1985), pp. 28-42.

tively independently from each other, but each of these types gave impetus to the characteristic skills and methods that would subsequently be combined into a national cartographic tradition.

## 2. ORIGINS OF RUSSIAN CARTOGRAPHY

There is much evidence of the early development of geographic knowledge in ancient Russia. Knowledge of the terrain was vitally necessary for the development of the country spread out over vast expanses of forest and criss-crossed by a myriad of rivers. The importance of geography and cartography was also essential due to the fact that Russia, during all its history, was a permanently expanding state which enlarged its territories by conquest or at the expense of vast unexplored regions.

As early as the ninth to the eleventh centuries, thorough descriptions of Russian lands began to be made. The best known of them is Nikon's "letopis," i.e. *Povest' vremennykh let*, which was compiled circa 1113 as an official narrative of Russia's origin and its ancient history. The text of the narrative demonstrates that the author possessed vast geographic knowledge and had a clear idea of the location of Old Russia. In Nikon's writings one can see the beginnings of a typically Russian approach to geography (and later to cartography) as a field of government interest, which would result in its highly centralized development. It was not by chance that the earliest legislation of the Russian State referred to land measurement. Thus, *Pravda Volodimera Vsevolodicha* (the Truth [Charter] of Volodimer Vsevolodich) issued by the Kievan Great Prince Vladimir Monomakh in the twelfth century referred to lines of demarcation between landholdings and other assets (for example, wild honey gathering plots) as well as boundary markers: "Anyone found guilty of destroying the marker around a wild honey plot in the forest shall pay a fine of 12 grivens. Anyone found guilty of filling a marker trench or cutting a [marker] oak, or building a fence on somebody else's lands shall pay a fine of 12 grivens..."<sup>3</sup>

In an agricultural society such as Old Russia land ownership was the main source of material wealth, and therefore the measurement, evaluation, and division of lands were of crucial importance. The practice of demarcation between estates advanced linear measurements using elementary tools, such as "vervi" or ropes, and also motivated the drawing of pictures to give rough representation of the features of farmlands and their natural surroundings. It was this practice that produced the earliest monuments of Russian cartography which survive today. The most famous example of this kind of cartographic images is an engraving on a stone nicknamed "Stepan's Stone" discovered in Tver Guberniya. Russian archaeologists believe that this stone served as a marker

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3 S.V. Yushkov, *Russkaya pravda, ee proiskhozhdenie, istochniki, ee znachenie* (Moscow, 1950), p. 216.

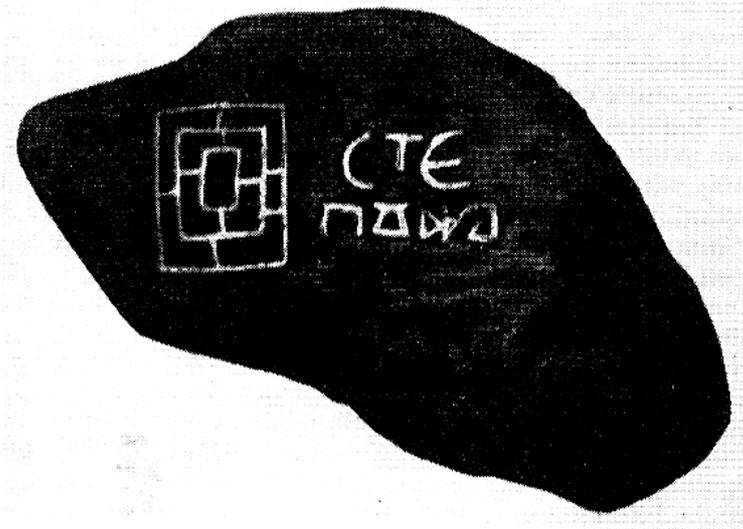


Figure 1. Stepan's Stone

for demarcation in twelfth century Russia.<sup>4</sup> The stone bears an engraving of a geometrical figure, which is interpreted as a primitive sketch of the farm, with the name "Stepan" - its possible owner (Figure 1). I agree with a few other authors that this engraving might be the oldest surviving sketch of land features in Rus-

sia, although it is impossible to prove this for certain.

The first documentary reference to cartographic works in Rus' also concerns a drawing of a disputed boundary. In 1483, a complaint "by the father superior and elders of the Snetogorskii Monastery" addressed to "the master of Pskov... and to the governor" was filed. This monastery was denied its access to the "sixth part" (as a fishery) of the Pererva River. The boyar Mikhailo Chet and a *stol'nik* [lieutenant] were dispatched to "look at that water in the Pererva River." "The boyar prince and his lieutenant looked at the water, drew it on a piece of bark, placed the piece of bark before the sovereign, and used the bark to explain to the sovereign."<sup>5</sup> The earliest surviving cartographic document kept by the Russian State Library in its Manuscript Division dates back to the 1530s, a piece of parchment affixed to a manuscript, *A Description of the Lands by the Solonitsa River*, procured from the Library of the St. Trinity and Sergius Monastery. This document is a schematic representation of a small area on the right bank of the Volga River just above Kostroma. The drawing shows a ploughed field with a meadow between the Solonitsa and an old river-bed called Kolovitsa. Its inscription says: "A crop of 100 haystacks received [yearly]." The back of the drawing contains a record of the purchase of an area of land in Kostroma Region for the St. Trinity and Sergius Monastery by the elder Davyd, and states that "the field measures 10 desyatins, and the meadow, 5 desyatins."<sup>6</sup>

4 See: *Istoriya kul'tury Drevnei Rusi: Domongol'skii period. 1. Material'naya kul'tura* (Moscow-Leningrad, 1948); A.A. Kuzin, "Razvitie chertezhnogo dela v Rossii," *Trudy IIEiT AN SSSR* 3 (Moscow, 1955).

5 Cited in D.M. Lebedev, *Ocherki po istorii geografii v Rossii 15 i 16 vv.* (Moscow, 1956), p. 200.

6 Rossiiskaya gosudarstvennaya biblioteka, Otdel rukopisei (RGB OR), f.303, No. 518, list 417 (s oborotom); S.M. Kashtanov, "Chertezh zemel'nogo uchastka v 16 v.," *Trudy Moskovskogo gosudarstvennogo istoriko-arkhivnogo instituta* 17 (1963), pp. 429-436; V.S. Kusov, *Kartograficheskoe iskusstvo Russkogo gosudarstva* (Moscow, 1989); Idem, *Chertezhi Zemli Russkoi 16-17 vv.* (Moscow, 1993), pp. 5 and 200.

The next trend in Old Russian cartography may be seen in the descriptions and mapping of towns, strongholds, and special defense lines of ramparts and fortresses typical of Southern Russia, which was constantly under Mongol-Tatar pressure from the thirteenth to the sixteenth centuries. Construction of architectural and defense structures required even more detailed measurements than land demarcations. Sketches of such structures were, as a rule, important technical documents which were subject to consideration by the higher authorities such as *voevoda* [military governor] and *prikaz* [ministry or department]. Sketch maps of fortresses, monasteries, and towns often combined plans and frontal features of walls and defenses, as well as landscape elements. These have much in common with Russian icon painting, which often incorporated purely cartographic themes (plans of monasteries, "hermitages," etc.). This trend in Old Russian cartography may have been influenced by Greek and Italian architects, artists, and constructors who were actively employed in major Russian towns at that time. In this manner, cartography in Russia might have been "genetically" combined with Byzantine and Roman cartographic traditions, an issue which deserves more thorough study in the future.

The emergence of the Moscow State was accompanied by protracted wars with Sweden, Poland, and the Livonian Order. Extensive negotiations, demarcations of borders, and the construction of fortifications to defend them required dozens of *chertezhi* [drawings]. Constant attention was given to mapping the fortress cities which were located near Russia's frontiers and subject to attacks. Many *chertezhi* of these cities were produced. An inventory of the Military *Prikaz* in 1668 cited the following numbers of *chertezhi*: Belgorod (1640-68) 18, Voronezh (1636-55) 7, Korochoa (1641-52) 5, Yablonov (1639-54) 5, and Sevsk (1641-53) 3.<sup>7</sup>

While the practice of mapping buildings, fortresses and towns developed the skills of linear measurement and of the mapping of limited areas, route-finding required in trade and military expeditions resulted in the art of route description, and subsequently formed the basis for mapping major routes, as well as the shorelines in the North along which maritime hunting expeditions were organized. The most ancient Russian descriptions of roads were included in the itineraries of Orthodox monks who traveled across Russia to the Balkan Peninsula, the Near East, the Holy Land, Jerusalem, and Constantinople in the twelfth and thirteenth centuries. An example of these is the itinerary of Father (*Igumen*) Daniil's pilgrimage to Palestine, written around 1107 and preserved to this day. Another itinerary, handed down to us by a manuscript from 1478, depicts a journey by Ivan III to Novgorod and precisely shows the distances between large and small settlements.<sup>8</sup>

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7 P.K. Trusov, *Nekotorye voprosy russkoi kartografii 16-17 vv.: avtoreferat dissertatsii* (Leningrad, 1953).

8 B.A. Rybakov, "Geograficheskie znaniya," *Ocherki russkoi kul'tury 16 v., Chast' 2* (Moscow, 1977), pp. 213-215.

Very detailed descriptions of the rivers and sea coasts of Northern Russia were made by Russian *pomor*, i.e. sailors and fishermen mainly from the White Sea region. Via the *pomor*, the Russian practice of route surveying and drawing accepted another instrument, the compass, which made it possible to orientate the charts and to evaluate all the main angles en route. With fondness the *pomor* called the compass a “matka” or “matoshnik,” which in Old Russian meant “mother” or “maternal.” The compass had been used by northern Russians as early as the fifteenth century.<sup>9</sup> Thus, in addition to linear measurements, angle compass measurement found broad applications, at least in route charting and mapping.

The first historical evidence on *pomor* charts dates only from the end of the sixteenth century. In 1594, not far from Kolguev Island, Dutch sailors obtained a chart of the White Sea up to the mouth of the Pechora River from a *pomor* pilot. In his letter to the famous English geographer Richard Hakluyt, Gerard Mercator said that for his map of Russia he had used data procured from Russians on the Northern regions.<sup>10</sup>

In my view, route cartography of this kind exerted a significant, if not decisive, influence on the development of a national cartographic tradition before the eighteenth century and shaped its specific features even for the later period. Route cartography was crucially important for compiling maps of the whole Moscow State as well as its major sections. Russian cartography before the eighteenth century knew none of the mathematics and geographic fundamentals practiced in Western Europe to map vast areas of the earth’s surface by using latitude and longitude coordinates, projection, and scale. Instead, a single cartographic canvas was composed of structurally heterogeneous materials, which were spatially arranged around the “skeleton” of routes. These routes extended along main rivers and roads. The orientation of such routes as parts of a complete drawing was facilitated by the fact that the main rivers in European Russia flow in the direction of the meridians.

### 3. CHARACTERISTICS OF RUSSIAN TRADITIONAL CARTOGRAPHY

Fifteenth-century Russia was in the process of uniting its separate principalities into a centralized monarchy. To strengthen its rule, the Grand Prince of Moscow tried to organize a nationwide cadastral census similar to the British Domesday Book by William the Conqueror. This census provided the central government with much geographic information and laid the foundation for future state cartography.

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9 B.P. Ivanov, “K istorii russkoi kartografii 17 v.,” *Izvestiya Khar’kovskogo otdeleniya Geograficheskogo obshchestva*, vyp.1 (Khar’kov, 1963), pp. 133-134; Idem, “K istorii kartografii russkogo Severa,” *Vestnik Khar’kovskogo universiteta: seriya geograficheskaya*, vyp.2, no. 25 (1967), pp. 97-99.

10 A.V. Postnikov, *Razvitie krupnomasshtabnoi kartografii v Rossii* (Moscow, 1989), pp. 16-17.

Although there are many references to maps and drawings in Russian documents from the fifteenth and sixteenth centuries, practically none of these maps have survived. However, a wealth of contemporary foreign maps of Rus' do exist and their contents indicate that they were compiled with the help of Russian descriptions and maps.

Polish cartographer G. Mainitsky's early map of the world (1100) described the area north of the Danube's mouth as *Russia*. The Ebstorf world map of 1235 contains fourteen geographic names from the territory of Rus', and makes special mention that "the indomitable wind blows above the cultivated fields of the Russians." Martin Behaim's world map of 1492 reflects the fact that Novgorod had joined the Grand Duchy of Muscovy and states that "Muscovy is the only country in Europe covered by forests."<sup>11</sup>

The issue of foreign cartographers' usage of Russian source materials has been discussed at length by many authors (V.V. Kordt, L.S. Bagrov [Leo Bagrow], K.A. Salishchev, B.A. Rybakov, Samuel H. Baron, to mention but a few). In particular, this proposition was advanced by Russian Academician Boris A. Rybakov, who claimed that Anthony Jenkinson's map of *Moscoviae* (known at that time in Ortelius's 1570 edition /Figure 2/ and De Jode's 1578 edition) was based, mostly or even entirely, on a Russian map compiled in 1497.<sup>12</sup>

This proposition has been regarded by many historians of cartography as far-fetched.<sup>13</sup> In particular, based on a through study of the genesis and transformation of the Jenkinson map, Samuel H. Baron refuted several points of Rybakov's argument.<sup>14</sup> Nevertheless, Rybakov's main argument in favor of Rus-

11 The geographic representation of Rus' in early medieval European sources is a topic on which Russian and foreign researchers began to concentrate their attention during the last few decades. See: V.P. Shusharin, "Drevnerusskoe gosudarstvo v zapadno- i vostochno-evropeiskikh pamyatnikov," A.P. Novosel'tsev et al., *Drevnerusskoe gosudarstvo i ego mezhdunarodnoe znachenie* (Moscow, 1965), pp. 420-452; V.T. Pashuto, *Vneshnyaya politika Drevnei Rusi* (Moscow, 1965); M.A. Alpatov, *Russkaya istoricheskaya mysl' i Zapadnaya Evropa (12-17 vv.)* (Moscow, 1973); M. Keller, "Frühste Zeugnisse von Kontakte zu Russen," M. Keller, ed., *Russen und Russland aus deutscher Sicht*, pp. 9.-17. *Jahrhundert* (L.N. Kopelev, ed., *West-östliche Siedlungen*, ser A, 1) (Munich, 1985), pp. 55-109; Leonid S. Chekin, "Samarcha, City of Khazaria," *Central Asiatic Journal* 33:1/2 (1989), pp. 8-9; Idem, "Lower Scythia in the Western European Geographical Tradition at the Time of the Crusades," *Harvard Ukrainian Studies* 15:3/4 (1991), pp. 289-339; Idem, "Mappae Mundi and Scandinavia," *Scandinavian Studies* 65:4 (1993), pp. 487-520.

12 B.A. Rybakov, *Russkie karty Moskovii, XV- nachla XVI veka* (Moscow, 1974), p. 111; Idem, "Russian Maps of the 15th and 16th Centuries," *The Canadian Cartographer* 14:1 (1977), pp. 10-23.

13 Discussion on this matter was renewed due to the sensational recovery of the original Jenkinson map of Russia made public by Krystyna Szykula, a Polish historian of cartography, at the 13th International Conference on the History of Cartography (Amsterdam and Hague, June 26- July 1, 1989).

14 S.H. Baron, "William Borough and the Jenkinson Map of Russia (1562)," *Cartographica* 26:2 (1989), pp. 72-87; Idem, *Explorations in Muscovite History* (Hampshire, 1991), ch.11; Idem, "The Lost Jenkinson Map of Russia (1562). Recovered, Redated and Retitled," *Terrae Incognitae* 25 (1993), pp. 53-65.

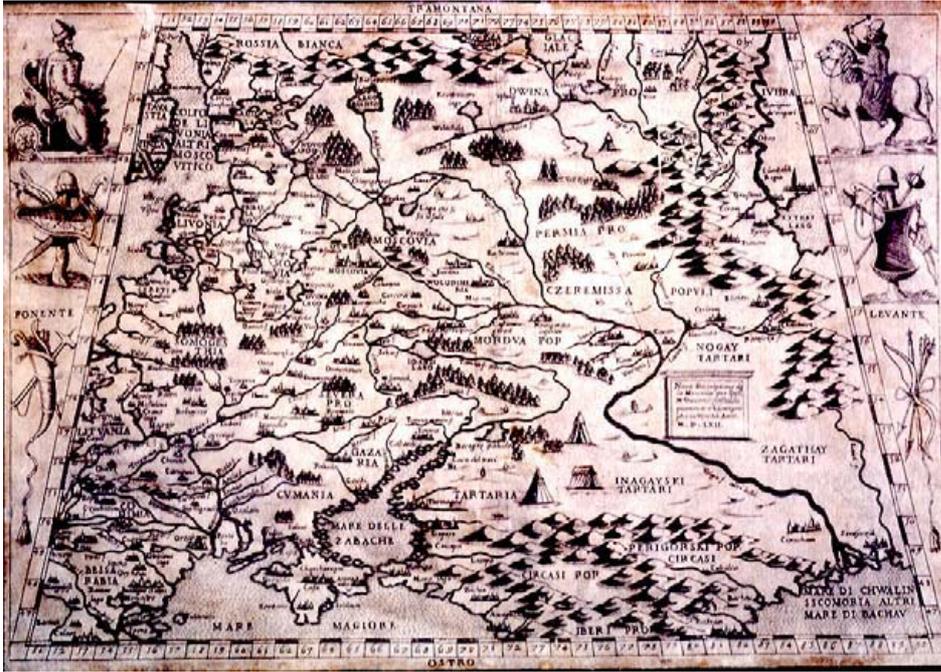


Figure 2. Jenkinson's Map of Moscoviae (the 1570 Edition)

sian sources of the Jenkinson map remains persuasive: the state frontiers depicted were very outdated and strongly reflected the situation in and around Muscovy in 1497. On the other hand, Samuel Baron was naturally perplexed by the fact that Boris Rybakov apparently failed to

notice the most distinct inaccuracy of the Jenkinson Map, which depicted a very large, non-existent "Lake Volog" as the source of the Northern Dvina, Dnieper, and Volga Rivers. Baron believes that Jenkinson could not have made such a mistake, if he had used a Russian source. However, it is worth pointing out that although such a single expansive body of water does not exist in this area, there are many portages (in Russian - *voloki*) as well as fairly large lakes, for example, Seliger. These portages and lakes were used by Russians as routes linking the northern and southern regions of the country. Unfortunately, these remarks do not change the fact that none of the native all-Russian maps have survived from the period prior to the seventeenth century.

Towards the end of the sixteenth century, Russia became a highly centralized state under the strong and, in many cases, cruel rule of Muscovite tsars. Not surprisingly, it is during this period that we find authentic documented evidence of the compilation of a native all-Russian map, the so-called *Bol'shoi Chertezh* [the Great Drawing] which was made in 1598 on the tsar's order. The Great Drawing itself has not survived, but its description - *Kniga Bol'shomu Chertezhu* [Book on the Great Drawing] - compiled at the beginning of the seventeenth century did survive. It is obvious that the book was used at that time together with the Great Drawing. From its contents one may perceive the wide range of information included in the Great Drawing and even understand the main features of traditional Russian map-making. This impression is confirmed by acquaintance with other Russian maps surviving from the seventeenth century; in particular, maps of Siberia and Siberian regions from the three wonderful collections compiled by Semen U. Remezov: *The Drawing Book of Siberia* (1697-1711), *The Chorographic Drawing Book* (1697-1711) and *The Drawing Book*