CARTOGRAPHIC IMAGE OF LITHUANIA IN THE OLD MAPS

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ABSTRACT

Old maps of Lithuania are witnesses of the country's history. They reflect our path from the marking of the first Baltic tribes on the 1st century map to emphasised lines of the first division of the Polish-Lithuanian Commonwealth on the German maps of the second half of the 18th century. The investigations of old maps of Lithuania involve over 700 old atlases and about 10 000 maps. These maps represent a priceless cultural heritage of Lithuania. The old maps mark the most essential features in the history of Lithuanian cartography, highlighting its most significant periods. There is made classification: up to the third decade of the 16th century - is period of rudiments of the cartographic view of Lithuania; the second stage is marked by B. Wapowski's map of Poland and Lithuania, by G. Mercator's map - the first individual map of Lithuania and ends early in the 17th century; the third period starts when the N.C. Radziwil's map of Grand Duchy of Lithuania saw the world. This map, very carefully prepared, extremely accurate of the period and of excellent design, opened a new era in the history of Lithuania cartography. It can be compared with the best examples of map of other major European countries. The research of cartographic image in the old maps reflects the course of development of the Lithuania State and borders. In the 18th century compilation of a new map of Lithuania based on triangulation network started up at Vilnius University. The realisation of these works was interrupted by Russian occupation in 1795.

1. INTRODUCTION

After restoration the independence of Lithuania in 1990 there was recovered right and perceived the duty taking care of state mapping future. The improvement of such works technology could be done on a base of experience accumulated during hundred's year in map's compilation and publishing. The investigation of cartographic image perfection since ancient time to Poland-Lithuania occupation in 1795 and looking over the measuring instrument's history it helps to solve tasks for up-to-day mapping. It is necessary to grasp the technology of old map's compilation, to estimate geometrical accuracy of map's content and to define valuable elements in helping to detect the character and dimension of landscape changes. The rational solution in topographical map's content, classification and detection of reason in failure could be applied in cartographic practice nowadays. Results of old maps' investigations will be used improving the country's cartographic image. Because of a huge amount of cartographic heritage there is limit in analyses - there have been investigated only old maps at a very small scale.

The Vilnius University Library has accumulated the largest collection of old maps of Lithuania in the country. This collection represents one of the most valuable old collections, a priceless cultural heritage of Lithuania. It goes without saying that the cartography collection of Vilnius University Library cannot provide an exhaustive enough reflection of the whole of Lithuanian cartography. It lacks some of very important originals of old maps, while other are kept in the depositories of foreign libraries and archives.

2. SOME ASPECTS ON LITHUANIA HISTORY

The name of Lithuania was first mentioned in writing in the Kvedlinburg annals in 1009. In the 12th and 13th century, the political-military alliance of the Lithuanian lands took shape. Lithuanian Grand Duke Mindaugas (1240-1263) completed the task of unifying the lands. Having been baptised in 1251, he was crowned King of Lithuania on 6 July 1253. Lithuania became a kingdom and quite a powerful force in the region. The lands in which the Lithuanian State took shape were known to the ancient world. As far back as 4th century B.C., the Greek traveller Pithius Masalis had reached the shores of the Baltic. Archaeological discoveries confirm that there had been commercial connection with Greek and Roman merchants.

With the death of Mindaugas in 1263 and the vigorous attacks of the Order of the Sword-Bearers, Lithuania returned to its old religious beliefs. The last of Europe's pagans, under the leadership of the Lithuanian Grand Duke Gediminas (1316-1341), expanded and reinforced the Lithuanian State by conquest. In 1363 at the battle of Blue Waters in the bend of Dnepr River, Gedimina's son, Algirdas, broke the back of Mongol forces that had ravaged the Russian lands. That same year, Lithuania annexed Kiev, in 1375, Polock, and in 1403, Smolensk. The state was ruled from the old capital, Vilnius. Algirda's son, Jogaila, inherited the Lithuanian throne in 1377 and understood the necessity of Lithuania returning to Christianity. With the successful penetration of the Order of Sword-Bearers toward the East, state interests compelled Jogaila to become closer to Poland. In 1386, Jogaila became a Christian and married Jadvyga, the heir to the Polish throne. The alliance of the Lithuanian State with Poland was continuously renewed, until in 1569, with the threat of the extinction of the Jogailaitis dynasty, a permanent constitutional union of the states was made.

According to cartographic experts, plans and maps were already being made in Lithuania at beginning of 15th century. In writings about the negotiations in 1421 regarding determination of the borders among Lithuania, Poland and the Order of Sword-Bearers, it is indicated that the Order's delegation to Pope Martin V relied on a map bearing the seals of Jogaila, Lithuanian Grand Duke Vytautas and other Lithuanian dukes.

The course of political and economical development of the state as well as military conflicts with neighbours encouraged the development of cartographic work. With the 1577 land reform law it, can be said that all the ethnically Lithuanian land and most of the lands of the Grand Duchy of Lithuania were measured. The land reform data were used in making the first map of Lithuania to be made by Lithuanian cartographers, the map of Grand Duchy of Lithuania drawn at the initiative of Duke N.C. Radziwil.

The different interests of the Kingdom of Poland and Grand Duchy of Lithuania led the dual state to its ruin. The increasingly stronger states of Russia and Prussia actively began to intervene in the internal affairs of the Polish and Lithuanian state. The take over of neighbouring countries' lands at every possible opportunity became the primary leitmotif of Russia's policy at that time in Eastern Europe. The partition of the Polish-Lithuanian State was accomplished in three stages, in 1772, 1793, and 1795. The history of 19th century Lithuania is full of drama, a century of enslavement, struggles for independence and exiles. In 1918, during the process of restoring Lithuanian statehood, the historic tradition was renewed. After Second World War Lithuania was again written on world maps as a state restored in its own ethnic lands.

3. THE DEVELOPMENT OF LITHUANIA MAPPING

The investigation of old maps of Lithuania has been made regarding to the collection of old maps accumulated in Lithuanian libraries, archives, institutions and referring to the reliable course of information. Vilnius University Library has over 700 old atlases printed before 1900 and about 10 000

maps. This collection, material from cartographic publications gave presumption for highlighting most significant periods in the history of Lithuanian cartography. The first - up to the third decade of the 16th century - is period of rudiments of the cartographic view of Lithuania, when only the name of country is found on a map, while the cartographic representation is heavily deformed (Claudius Ptolemy, Nicolous Cusanus, Marcus Beneventanus and others). The beginning of the second stage is marked by Bernard Wapowski's map of Poland and Lithuania (1526), by Gerardus Mercator's map of Lithuania and ends early in the 17th century. Better maps by Waclaw Grodecki (1562), Andreas Pograbka (1570), Mathias Strubicz (1589) laid the foundations for Gerardus Mercator's *"Lithuania"* (1595), the first individual map of Lithuania. The third period starts early in the 17th century, when the map of the Grand Duchy of Lithuania, which to the present day is called after its initiator, patron and publisher - Nicolaus Christophorus Radziwil the Orphan - saw the world. This map, very carefully prepared, extremely accurate for the period and of excellent design, opened a new era in the history of Lithuanian cartography. It can be compared with the best examples of maps of other major European countries. Having appeared after the union of Lithuania and Poland, it was numerously reprinted in the 17th century and, although a historical anachronism, it still bore witness to the former might of the state of Lithuania. In the 18th century Polish-Lithuanian map by Italian J.A. Rizi Zanonis (1772) was distinguished for detailed content and accuracy, widely used for determining of routes.

3.1. The beginning of Lithuania mapping

In the 2nd century, the Greek scholar Claudius Ptolemy (approximately 90-168) mentioned the East Baltic region while describing the maps he had made in his atlas *"Geography"*. Although in the eight maps of this atlas Lithuania was not yet named, the Baltic tribes - Galinds and Suduvians (sudini) - were included. The rivers of Vistula (Vistula fluvius), Nemunas (Chrones fluvius) and Dauguva (Rubon fluvius) can also be seen. Neither *"Geography"* nor any originals of the map have survived. A copy of Claudius Ptolomy's map, made by M. Planude (1260-1330) was found in Greece at the monastery of Votoped. It is consider being closest to the original. In a map of Central Europe named by C. Ptolemy, published by the Italians in 1416, there is the first topographic image of Lithuania that is known to us. Descriptions of many settlements, rivers and its geographical coordinates were presented there. In the work of C. Ptolemy there was accumulated 26 maps, created in conic projection. C. Ptolemy's atlas was very popular. First published in Bologna in 1477, in 15th-17th centuries it was 49 times published in different European cities, supplemented with new works by cartographers of the period.

In 1375 the Jewish cartographer A. Kreskva in the so-called *"Catalonian"* map presented an image of the Baltic Sea indicated Klaipeda and the Nemunas, and wrote in *Litefanie Paganis,* that is, pagan Lithuania. That was first time that name of Lithuania was mentioned on a map. It is expected that map of Lithuania was compiled at the beginning of 15th century. The historic source describes negotiations between Lithuania, Poland and Order of Sword-Bearers regarding to their borders at Rome Pope. Delegation of Order had the use of map with seal of Lithuanian Grand Duke Vytautas and others. The oldest detail information about location of many geographical objects in Lithuania is accumulated in descriptions of Sword-Bearers war roads (before battle of Zalgiris in 1410).

In 1450 the German scholar Nicholas Cusanus (1401-1464) presented quite a more detailed cartographic image of Lithuania in his map of Central Europe. Vilnius, Kaunas, Klaipeda, Trakai and Medininkai are already marked here. Into the Baltic Sea flow the Nemunas (*Memele*), Sventoji, and the Venta. In addition, the Coursion Lagoon is marked. In 1459 the Venetian monk Fra Mauro used the Latin inscription *Litvana* to indicate the area of Lithuania on a world map.

Maps of Lithuania Grand Duchy and Poland Kingdoms, compiled in 16th century involve many truthful elements. Worth mentioning maps are maps created by Polish cartographers Bernard Wapowski (1470-1535) - *Mappa Regine Poloniae ac Magni Ducatus Lithuaniae* and Waclaw Grodecki (1535-1591) - *Description of Poland and of Neighbouring Lands.* In 1570 the map was included into Abraham Ortelius

atlas *"Theatrum orbis terrarum"* and reprinted numerously in it. Despite some inaccuracies, the map is of a much better quality when compared to the works by earlier authors. The cartographic view of Lithuania is also more accurate.

At the end of 16th century there was worldwide-promoted German and Flemish mathematics and cartographer **Gerardus Mercator** (1512-1594) - named **King of Cartography**. The map called *"Lithuania"*(figure 1) was drawn in approximately 1570, but only in 1595 published in G. Mercator's Atlas. This is the first individual map of Lithuania. Although containing quite a number of inaccuracies, it is fairly detailed if compared to the works by earlier authors: over 60 settlements of present-day Lithuania and about 20 rivers are marked on it. The map includes territory of Lithuania Grand Duchy and created in trapezium projection in one list, which size 43.7x37.3 cm. The linear scale with Lithuanian mile divisions is given outside frame. Inscriptions on the map are written in Polish as well as German. G. Mercator created new equiangular cylindrical projection. G. Mercator himself collected the material for all his maps, systematically organised them, and drew, engraved, and coloured the prints. Even at present-days Principe of G. Mercator projection is used in Universal Transverse Mercator Projection for Lithuania mapping.

3.2. A new era in the history of Lithuanian cartography

The publishing of the first original map of the Grand Duchy of Lithuania was taken full care of and financed by the Governor of Vilnius, Nicolous Christophorus Radziwil the Orphan (1549-1616). The publishing date of original is indicated on the map: 1613. The frame of this map consists of geographical coordinates, were latitudes determined by astronomical measurements and differences of longitudes were calculated according to distances measured on land and sea roads as well as by magnetic azimuth. Lithuanian map was created in trapezium pseudocylindrical projection at a scale of 1:1300 000 in four sheets. The first in cartographic practice there coordinates grid was drawn inside the list of map in every 1^0. The creation of map lasts almost quarter of century. The map was drawn by a team rallied by N.C. Radziwil, whom himself headed the works of field cartography. The drawing of the map and the text about Lithuania were prepared by Thomas Makowski (1575-1630), a famous graphic artist of the period who worked in the Radziwil estate in Nesvizh. The map was prepared in 1590-1600. This wall map was engraved by the prominent Amsterdam engraver Hessel Gerritsz (Lat. Guilhelmus Janssonius, 1571-1638) who, to avoid confusion with Jan Janszon (Lat. Joannes Janssonius), the owner of rival publishing house, in about 1622 changed his name into Willem Jansz Bleu (according to his father's name, Blue Willem). The Upsala University copy differs from the one reproduced here in that a description of Lithuania is added in he bottom part of the map. The engraving boards of the 1613 edition, only without the description of Lithuania, were used in reprinting this map in the atlases published by Willem Jansz Blaeu and his son Joan (1598-1673). Figure 2 shows fragment of N.C. Raziwil's map reprinted in 1750. It was the most accurate map of Lithuania so far. Poland did not have such a map until 1772. N.C. Radziwil's map is an excellent monument of Lithuania late Renaissance.

In 1772 Italian cartographer J.A. Rizi Zanonis drew the Lithuanian-Polish map "Carte De Pologne..." at a scale of 1:692 000. This map was printed in 24 sheets, size of sheet's 52x32 cm. The map was skilfully engraved, well decorated, detailed and accurate. Roads, many settlements with quite realistic inscriptions there were described at first in the history of Lithuanian cartography. J.A. Rizi Zanonis' map was very popular during several decades and it is supposed that Napoleon had been used this map during the invasion into Russia in 1812.
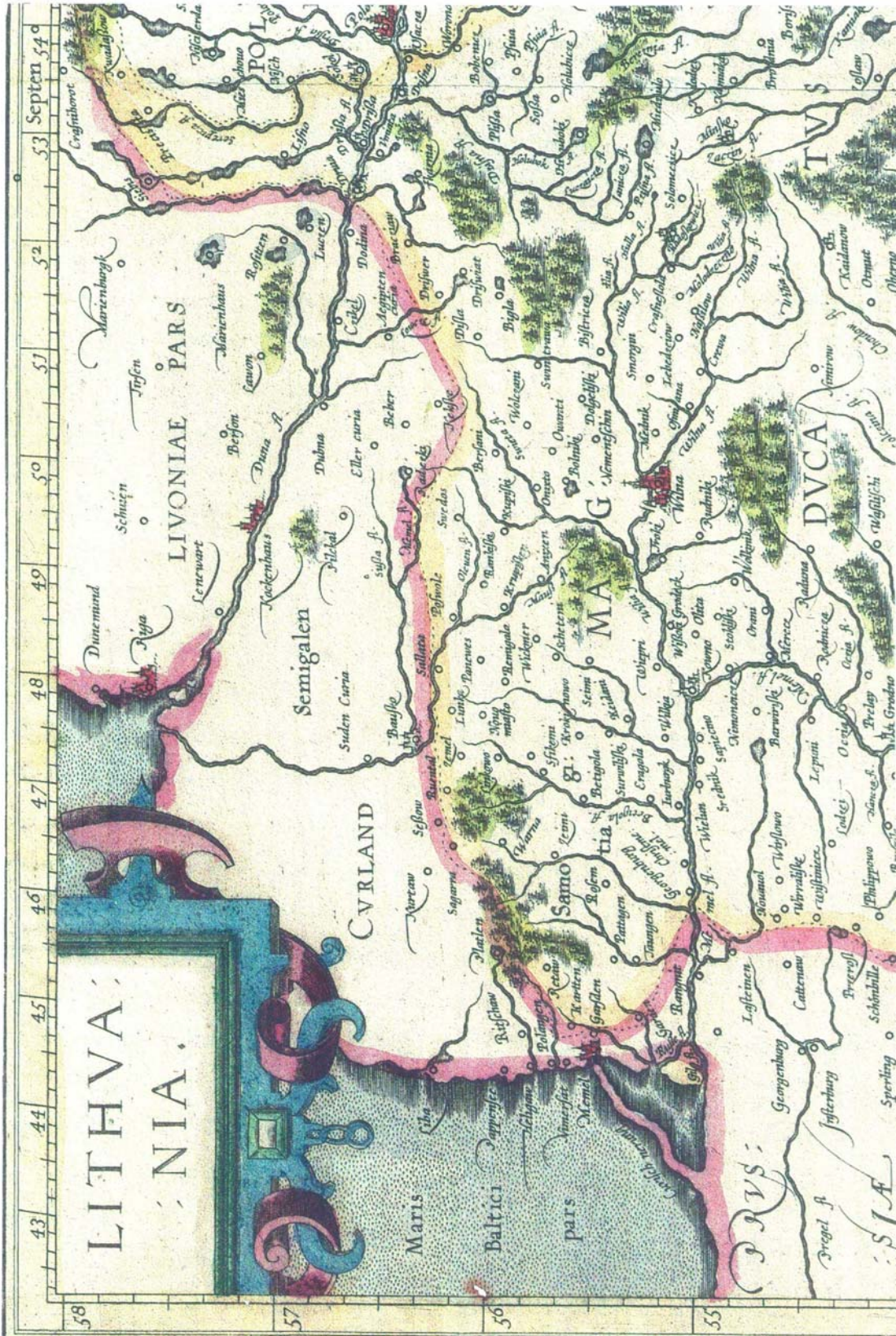
Figure 1. Fragment of Lithuania map compiled by G. Mercator

Figure 2. Fragment of N.C. Radziwil map

3.3 Projects of Lithuania mapping in the 18th century

The application of triangulation method for creation of geodetic network in 18th century it causes the cartographic movement in Europe as well as in Lithuania. Vilnius University had been initiator of systematic mapping idea in 18th century. Prof. M. Pocobutas, head of Vilnius astronomical observatory, supported this idea. Group of specialists starts works for determination of astronomical coordinates for Lithuanian and some Latvian localities.

In 1791 the project of Lithuania Grand Duchy lands management for mapping of all Lithuania territory was approved by Parliament. The realisation of such project was stopped because of third and last portioning of the Polish-Lithuanian State in 1795. Map from the atlas *"Atlante historico, politiko e statistico della Polonia"* shows Poland and Lithuania after third portion. Russia, Austria and Prussia carried out this portion of the Poland and Lithuania. Russia received all of Grand Duchy of Lithuania, except for the region across the Nemunas, which was annexed by Prussia. Lithuania was in struggles for independence till First World War ends, only from 1918 State of Lithuania was returned on world maps again.

4. CONCLUSIONS

The Jewish cartographer A. Kreskva first mentioned the name of Lithuania on a map in 1375. A new era in the history of Lithuanian cartography opened map of the Grand Duchy of Lithuania, published by Radziwil Nicolaus Christophorus the Orphan, Governor of Vilnius in 1613. It was the main event in the cartographic history of Lithuania. This first original map of Lithuania was an outstanding achievement not only in the history of Lithuanian cartography, but in that of Europe as well. N.C. Radziwil's map as an excellent cartographic monument was popular for hundred years.

In the 18th century scholars of Vilnius University were included in cartographic work for systematic mapping of Lithuania area. The increased movement of mapping and changes in the manner of fighting in the Europe that stimulated the interest of Lithuanian officials taking care for publishing of a new state map. At the end of 18th century the project of Lithuania Grand Duchy land measurements including map compilation was confirmed by Parliament's decision. However, the realisation of such projects and intentions was stopped by third and last portion of Polish-Lithuanian State, interrupting existence of Lithuania as a State with its own ethnic lands.

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