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Chapter 6

Unexpected 16th Century Finding to Have Disappeared Just After Its Printing – Anthony Jenkinson's Map of Russia, 1562

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Additional information is available at the end of the chapter

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1. Introduction

Nowadays it is rather not common to find 16th century map to be unknown for five centuries. In case of Jenkinson's map of Russia (1562), it was well known by historians of cartography, however, only from their renditions. It occurs possible thanks to the outstanding Flemish 16th century cartographer and editor Abraham Ortelius. One day he simply decided to collect the maps of his times to create an atlas. In this way the first atlas in a quite new editorial form came into existence, equally becoming a rich historical source for the scientists of different fields. Ortelius collected the maps of different regions of the world made by different excellent cartographers of his times. One of the maps that gained his interest was the map being a result of the first English travels to explore the way to China and India by water. English traders travelled along the north-east passage. At the same time Ortelius has just learned that the map of Moscovia has been printed in London by a king's printer, Reginald Wolf. Twenty-five copies of the map in question have been sent to him by Nicolaus Reinoldus to Antwerp, what the latter mentions in his letter. One of the copies has been assigned to be remade in the form of rendition and to fit the size by Ortelius' new Atlas *"Theatrum Orbis Terrarum"*, first edition (1570).

2. The map itself, its author, his travels and the differences among the genuine copy and its renditions. The importance of its recovery

The map of Moscovia – today's western Russia, by Anthony Jenkinson with the 1562 date is hand-colored copper-cut and it measures 101,7 x 81,7 cm including 6 cm decorative border. It is considered by historians as a wall map and has been made in the north orientation.

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Doubtful in this respect is only Finland Gulf (*"Sinus Finlandicus"* in the map), which is situated north-south instead of rather east-west.

In the north part of the map there is today's north-western coast of Russia. Far eastern part of the coast in geographical sense reaches the Ural mountains and the lower course of the Ob river. The river discharges into so-called North Sea ("*Mare Septentrionale"*) – today's Kara Sea. The source of the Ob river in the map is in mysterious Chinese Lake *("Kitaia Lacvs"*). On the opposite side of the lake, i.e. from the south, the river continues its course, however not as the Ob but the Sur river, which bifurcates in its upper course in the *"Shamarghan"* and *"Baida"*regions. The tributary of the Sur is *"Amow"*river.



Figure 1. Jenkinson's genuine copy, 1562 (size of the map see in text). From Wrocław University Library cartographic collection

An eastern part of the map, i.e. east of Ob and Sur rivers, covers quite a wide space of this part of the map. However, geographically this is a rather poor fragment. Namely, there are only names of the following regions, going from the north: *"Casackia"*, "*Samoyeda*" and *"Molgomzaia"*, *"Baida"* and *"Colmac"*. In the south part of the map we can see the name *"Persia"* and in the lower right-hand corner there are *"Mhoghol"* and *"Kirges"*. To the north there is *"Taskent"*, where the Sur river takes its source. In the most south-eastern end of the map there is a city called *"Audeghen"*. In south-western part is the Black Sea but it has been almost wholly covered by the cartouche with the dedication for the sponsor of the map. Above this cartouche we can read the names of *"Lithuania"* and *"Livonia"*. In the western part is the above mentioned Finland Gulf and White Sea, named not as it is today but as the gulf of the "*North Sea*"("*Mare Septentrionale*" on the map)



Figure 2. Ortelius' rendition, one of the edition in his *"Theatrum orbis Terrarum"* (here much enlarged to Jenkinson's original copy above – size of the map see in text). From Wrocław University Library cartographic collection

Characteristic feature of the genuine copy of the map in question is its unusually rich decorativeness. It is undoubtedly worth wider discussion. The variety of the content of the map we can study is especially interesting. There are ethnographic, religious, military and historical elements. Finally, the map can be examined in respect of its rich fauna, too. These features make the map an outstanding document of the epoch of the territory portrayed here. The decorative border with metal design is an additional element which makes the map even more interesting. We can find the special value of the map in the numerous texts distributed all over it. These decorative elements are of historical value, too. Mentioned texts are boxed in different cartouches.

The author of the map in question – Anthony Jenkinson (1525/29/30?-1611) is one of the first English travelers, and simultaneously a member of the founded in the years 1552-1553 and chartered in 1555 Muscovy Company. The Company, the society of the English merchants has been later called the Russia Company, English Trading Company, Company of Merchant Adventures or differently. Its purpose was to penetrate and to explore the north-east sea passage to reach China and India.

Sebastian Cabot (ca. 1482 - 1557), Robert Thorn (1492-1532) and John Dee (1527-1608) were the first who became the impellers of this enterprise. As already mentioned, Jenkinson was

not the first voyager who travelled to Russia. Earlier there were two brothers – Stephen Borough (1525 - 1584) and William Borough (1536- 1599) who undertook the task to pass the way to mouth of the Ob river. Richard Chancellor (1520-1556) and Sir Hugh Willoughby (1516-1554), the explorers of the northern part of Russia were the next travelers, but unfortunately they both perished in their voyages.

Anthony Jenkinson was the trustworthy agent of the Queen Elizabeth I (1533-1603, dominated 1558 - 1603). He began his journeys in 1557. First of them were in 1557-1560. The next: 1561-1563 (to London 28 Sept. 1564), 1566 - 1567 and the latest 1571 - 1572. His map is dated back to the 1562, however, when we take into account the examinations by Samuel H. Baron's (1989)[1] and Krystyna Szykuła's, (2000)[2], the map in question has been probably published between 1567 and 1569.

An exciting moment when the genuine copy of the map has been rediscovered was finally that could be compared with the existing renditions, i.e. made by Abraham Ortelius (1527 - 1598) and Gerard de Jode (1509 - 1591). It was especially exciting because of the different representations by Ortelius and de Jode which differ with one another. Namely de Jode's picture displays only, even not in whole, the left-hand part of the original. Before the genuine copy was recognized, scholars had discussed who of these two cartographers has been right. Finally today we know that Ortelius' representation was correct in respect to the territorial range.

The size of the three maps – the prototype and its renditions was the essential distinction to be seen at first glance, because of the quite other way of situating the title and dedication cartouche. The existence of the dedication has been only mentioned by Ortelius, but we can learn about its content as recently as from the genuine copy. The same concerns the content of boxed texts, decorative elements and borders – much more of them and changed in style in the genuine copy of the map. An appearance of the quite new creators in the main title cartouche was of the most importance issue. Namely, both of the creators of renditions placed Jenkinson as an author in their cartouches, but only Ortelius additionally included the name of Henry Sidney (1529-1586), the sponsor of the genuine map to whom the above mentioned dedication has been devoted by the editor Clement Adams (1519? – 1587). The second unknown yet to us was an engraver Nicolaus Reinoldus (Nicolas Reynold). We already know him thanks to his letter mentioned in the Introduction, unfortunately undated, which has been estimated to be written about 1573[3]. The name of the printer of the

[1] The date has been established by Professor regarding the journeys of Thomas Southam and John Spark, quoted in their account, in early English: *"The way discouered by water by vs Thomas Southam, and Iohn Sparke, from the towne of Colmogro, vnto the citie of Nouogrode in Russia, conteining many particulers of the way, and distance of miles as hereafter foloweth. Anno 1566"* (Hakluyt, 1589, p. 390)

[2]The date has been established by the author according to *"A book of heraldry"* at Cambridge University Library, call number Kk. I. 26 (Szykula, K., 2000). One of the coats of arms have been conferred to Henry Sidney in 1566 and visually it is undoubtedly connected with the composed under the dedication in the genuine map

[3] In the light of the recovered map the date is now not possible to be correct, because of the date of the Ortelius' first edition *"Theatrum Orbis Terrarum" (1570),* where the rendition has been included. The possible date must be previous to the first edition, then about 1569 (?). The date 1573 had been estimated before the genuine map has been recovered and placed in Hessels J.H., 1887 (the mentioned printed collection of the Ortelius' correspondence)

map has been recovered, too, to be Reginald Wolf(ius) - Dutchman, settled in England since 1530, d. 1573. He was the member of the Muscovy Company, as well, in the following years: 1559, 1564, 1567 and 1572. In the letter we can find one more interesting person, Jan de (van) Schille (1533 - 1586), who was an Antwerp painter and engraver and could be also engaged in creating the genuine map, maybe even responsible for the decorative part of it. In the letter he is the person who was allowed by Wolfius to keep one of the 25 copies of the map. The original copy of the letter quoted in Hessels's Ortelius' correspondence, too (Hessels J.H., 1887, letter number 43) had been indicated by Peter Barber – then the Head of the British Library Manuscript Department (Barber, P., 1989). Unfortunately, the letter is still the only document in which genuine Jenkinson's map had been mentioned, and even not quite directly. We can only presume that mentioned 25 copies were not a full size of its edition, and therefore ask where is the rest (if there were any at all) of the 24 copies which are missing, if we take into account only those mentioned in the letter.

As far as the above mentioned differences in arrangement and the content of cartouches are concerned – in Ortelius' rendition the title cartouche is placed in the left hand bottom corner, but on the genuine map in the upper left corner. Close to the title cartouche in genuine copy there is another very important one in which all the regions belonging to Moscovia at that time are mentioned. De Jode's title is also placed in the left upper corner but only with the name of Jenkinson (without information on Henry Sidney). The latter is distinguished only by name in Ortelius' title cartouche. Then we can read the comprehensive dedication to this noble man, as the sponsor of the map, only in its genuine copy.

As far as the dimensions of the three maps are concerned they go are as follows: the genuine copy – 101,7 x 81,7 cm.[4], Ortelius' rendition – 44 x 35,3 cm[5], and de Jode's – 26,3 x 32,6 cm[6]. Quite a long in size horizontally is one more rendition, by brothers Jan and Lucas Deutecum (Doetecum, too) – 104 x 50 cm[7], which the author kindly received from Dr Aleksy K. Zajcev.

3. How and where the Jenkinson's map of "Moscovia" has been found?

This coincidence took place in the author's domestic city, Wrocław (Poland). It was during a visit in the cathedral library, that the head of the library informed her about one lady, who brought him a 16th century map. It was obviously extremely exciting news for the author. The owner of the map, the lady who was a teacher in one of the Wrocław high schools, decided to sell it. That is why she brought the map to the author (then the head of the Wrocław University Library Department of the Cartographic Collection). An expertise has

[4]"*Nova absolutaque Russiae, Moscoviae et Tartariae, descriptio. Authore' Antonio Jenkinsono Anglo, Clemente Adamo èdita, et a Nicolao Reinoldo Londinensi aeri insculpta. Anno salutis, 1562"*

[5]"*Russiae, Moscoviae et Tartariae descriptio. Auctore Antonio Ienkensono Anglo, edita Londini Anno. 1562 et dedicata illustriβ: D. Henrico Sÿdneo Walliae praesidi"*

[6]"*Moscoviae Maximi amplissimi que Ducatus Chorographica descriptio. Authore Anthonio Iankinsono Anglo"*

[7]„*Regionum Septentrionalium, Moscoviam, Rutenos, Tartaros, eorumque hordas comprehendentium, ex Antonij Jenkensonij et Sigismundi liberi Baronis ab Herberstein itinerariis, nova descriptio. 1569; Joa. & Lucas Duetecum tgraefscap vä Holland Anno 1569 geprint i Hollant in des Gravenhage. 1569; Joa. & Lucas Duetecum tgraefscap vä Holland Anno 1569 geprint i Hollant in des Gravenhage.*

shown that just found genuine map is the one used by Ortelius and de Jode as the basic picture to their most popular renditions. Additionally in the famous *History of Cartography* **(**Bagrow, L. & R.A. Skelton, 1964, p. 172**)** , there is only one sentence on the genuine map – *"the map not survived and it is known only from the copies in the atlases of Ortelius and de Jode"*. Then the conclusion was quite clear – that is the only copy of the map in the world! What is yet more interesting, before bringing the map to the University Library the owner has been showing it in some eminent libraries but nobody showed any interest in this map. Because of the great interest of the author finally it had been purchased by the Wrocław University Library.

According to information of the owner, the present map has been used by her for years as a didactic (teaching) aid on her history lessons. Because of its big size it has been folded twice and finally brought in a plastic bag, simply because the lady was not aware of its value. To the question of how the map ended up in a teacher's hands, she answered that it was a gift from her pupil, who found it after the World War II, probably in some cellar or attic!



Figure 3. The content of the dedication by the editor Clement Adams to Henry Sidney – the sponsor of the Jenkinson map. Below Sidney's coat of arms

4. How could Jenkinson's map be examined by scholars if the genuine copy of the map has been lost immediately after its printing? (About the development of the examination by numerous scholars)

Undoubtedly we have to remember that it happened thanks to above mentioned famous cartographer Abraham Ortelius as the creator of the first Atlas *"Theatrum Orbis terrarum"* to which the Jenkinson's map had been incorporated, too. Although he did not use it in an original form, however, thanks to him the knowledge on the map and its author has survived. On the other hand, to include the map in its original big size was even technically not possible. He was then obliged to reduce its format, as well as to limit its decorative elements and the number of boxed texts. However, he never limited the geographical content of the maps he reworked. He also always put the original authors in them, in spite of his own authorship as the new author of rendition. The engraver of Ortelius' rendition was Franciscus (Frans) Hogenberg.

Apart from the Ortelius' and de Jode's renditions, another one had been made by above mentioned Deutecum brothers with the date 1569[8]. As well as rather mysterious is the Ortelius' rendition reworked by Antonio Possevino (1533/34 --1611), in 1587 edition of his book (reproduction of the map in : Szykula, K., 2000, p. 79). One more rendition, has been published by B. Langens much later than the first edition of Ortelius' Atlas in Amsterdam (1598)[9] .

The first historian of cartography who revealed his interest in Jenkinson's map was Richard Hakluyt (1552 – 1616). It resulted in the comprehensive edition of the book entitled *"The Principal Navigations, Voyages and Discoveries of the English Nations"*(1589), where he included Jenkinson's accounts from his diary about his journeys. Among them he placed the description on the journey by the first Russian ambassador in England during the reign of Mary Tudor. The interest in the period of journeys and Jenkinson's map has reappeared and raised in 19th century. It was the topic which became the fundament of the work by Edward Delmar Morgan and Charles Henry Coote and resulted in their book published in 1886 – *"Early Voyages and Travels to Russia and Persia, by Anthony Jenkinson and Other Englishmen"(* Morgan, E.D. & Coote, H., 1886). At the end of the 19th century we can notice a great interest by Russian scholars, as well. The leading one at that time was the scholar of Russian history of cartography Veniamin Aleksandrovich Kordt (1899), who has published absolutely fundamental work on the early maps of his country in which he included their reproductions, too. At the beginning of the 20th century another Russian historian of cartography H. von Michow (1906, pp. 22-25) showed the same interest, and in the interwar period also Leo Bagrow (1928) – the Russian emigrant settled in Germany and then Sweden. Again, after the World War II, we can observe an interest in our subject. There are articles by Dutch historian of cartography Johannes Keuning (1956), and by mentioned Leo Bagrow

[8] The map is known as well as "Dashkov map" because the only genuine copy survived in Dashkov collection in Petrograd (St. Petersburg)

[9] Sketch map published by Petrus Kaerius entitled *"Ruffia"* According to Wikipedia, the map is available in New York Public Library.

(1962). In the same year the book by Margaret B.G. Morton had been published, but rather from the Jenkinson's private life point of view. Then in turn we have works by: Rybakov, A. B. (1974), Sager, P. (1974), Bagrow L. (1975) and Oakeshott W. (1984) and finally by still uncertain to the original finding S.H. Baron, (1989) together with his several works connected with the epoch in question. So, these are all of the works issued before the genuine map has been found (1987), i.e. the period when none of the mentioned authors was aware of the original picture of the Jenkinson's map, i.e. the period when they had only two main existing renditions as a proof of the map's existence to their disposal.

In the year 1987 starts a new epoch for the Jenkinson's map. The second step of the author taken was to announce the subject of the rediscovery to Organizers of the next International Conference on History of Cartography, then it was to be in Amsterdam. Just after the announcement of the author's abstract of the subject, Canadian editor of *"Cartographica"* Edward Dahl showed an interest in this exciting news. The editor needed the confirmation that the announcement on the genuine map in an Abstract is trustworthy. It was because of the next paper which professor Baron prepared for printing, still about the rendition of the Jenkinson map. Hence, professor Baron had to rework just before delivering the article (Baron S.H., 1989) to the editor and write in the footnote this sensational news, however as has been said, carefully informing on the new discovery. The presentation during the conference brought unexpected effect. Englishmen who noticed the genuine map reproduction in the poster session called: sensational, incredible, unbelievable. The first post conference publications on the discovery were: short article in conference book (Szykuła, K., 1989); conference account (Scott, V.G., 1989), and the same author short information with small reproduction of the rediscovered map (Scott, V.G., 1990), finally additional information (Barber P., 1989). At the same time in accounts by Eckhard Jäger (1989) and R. W. Karrow (1989) the copy in question had been announced, too.

In the meantime, there has been established a friendly scientific correspondence cooperation between Professor Baron and the author which resulted in the Professor's first article about the genuine copy (1993). He considered the relations between original and its renditions, and tried to establish the real dating of the genuine copy.

5. The picture of the Jenkinson's map. The description and analysis of the richness of the content

5.1. Historical background of the map

From the historical point of view Jenkinson's map is the 16th century document of the epoch during the reign of Elizabeth I (1533–1603) in England and of Ivan IV Terrible (1530-1584) in Russia. To be more clear why the map had been depicted we have to go back to the epoch of Edward VI (1537-1553) and Mary Tudor (1516-1558). The date of the death of Edward is at the same time the date of establishing the Muscovy Company. The date of the death of Mary is in turn the period when our Jenkinson had been travelling on his first voyage to Russia (he left London on May 1557).



Figure 4. Ivan IV Terrible and Anthony Jenkinson (from the genuine map)

Important dates for the mentioned period were following events as attachment of Khanate of Kazan (1552) and Astrakhan Khanate (1556), as well as subordination by tsar the Nogai Orda and Khanate of Sibir. At the time the Russian neighborhood played an important role – Poland and Lithuania, for instance Ivan's suffering the defeat in the war with Livonia (1557/1558 – 1570). To have an access to the Baltic coast was the main reason of the battle at that time.

This short introduction to historical epoch of our map of Russia let us take a look at the map of this point of view. Historical content is reflected in numerous texts on the map, as well as, for instance in silhouettes of numerous khans which are placed in the right-hand part of the map in its south-eastern fragment of the territory. In the left-hand part of the map there is only one figure of khan -*"Ismail Sophi"* near the Ardevil town *("Ardabil"* in the map). This city is situated close to the other important city, Tabris (*"Tenbres"*) and in the western direction there is yet one more important city Kazvin *("Caſby"* in the map).

Opposite to the left-hand side of the map, in the right-hand side, are five figures of khans. There are (going from the south): *"Kvrcot chan"*- to the north of *"montes paraponise"* , "Alie chan"– in *"Kirges"* region, *"Blag chan"*- in *"Boghar"* region, *"Azim chan"*- in *"Turkmen"* region and *"Aphis chan"- in "Taskent"* region, to the north of *"Taſkent"* city.

As far as the content on regions included is concerned the best idea is to quote full list mentioned in the bottom of the title cartouche, i.e. left hand corner of the map. This goes as follows:

> *"Johannes Baſilius Dei gratia, Magnus Imperator totius Rußiae, Magnus Dux Vladimiriae, Moſcoviae, Nouogardiae, Imperator Aſtrachaniae atque Liuoniae, magnus Dux Plaſrouiae,*

Smolenciae, Tueriae, Iogoriae, Permiae, Viatiae, Bolgoriae, etc. Imperator et magnus Dux Nouogardiae Niuociorum, Chernigouiae, Rezaniae, Volotiae, Erzeuiae, Bieliae, Jaroslauiae, Belozeriae, Vdoriae, Obdoriae, Condiniae, et aliarum multarum regionum Imperator atque …(?)totius Septentrionis dominus".

As the historical description we can also consider the following one[10]: *"Haec pars Lituaniae, hic descripta, Imperatori Ruſſiae ſubdita"* (transl. "this part of Lithuania, here depicted, is subordinated to tsar"). Similar description concerns the subordination of the part of Livonia.

One of the descriptions is a historical one only at its beginning: *"Permiani et Condoriani, aliquando Ethnici fuerunt, at nunc a Ruβorum Caeſare perdomiti,…"* (transl."Permians and Condorians were in past times one nation, but now they have been conquered by Russian tsar").

The subsequent text of historical content is: "*Crimae ſunt Mahumetiſtae, quibus cum Moſcouitis aſſiduum bellum intercedit*" (transl. "Crymens are Mahometans, who still proceed the war against Moscow"), "*Cazane Regnum Tartariae fuit Anno 1551 expugnatum ac Imperatori Ruβiae subiectum*" (transl. "Cazane kingdom was taken away from Tartaria and subjected to Russia in 1551"), "*Aſtracan Tartarorum regnum fuit anno 1554 ſubactum, ac imperio Ruſſiae adiectum"* (transl. "Tartar region Astrakhan was conquered and attached to Russian Empire in 1554").

Here again there is only the beginning of the text which can be interesting from the historical point of view: *"Medi, Perſaeque Mahumetani ſunt, aβidueque cum Turcis Tartariſque pugna confligunt…"*(transl. "Meds and Persians are Mahometans, they are still fighting with Turkish Tartars").

Interesting is the description close to Caspian east coast region: "*Turcomannorum imperium inter quinque fratres eſt partitum, quorum qui primas tenet Azim Chan nominatus eſt. Reliquero, Sultani appellatur. Quique ſolum oppida uel potius caſtra subiectione et imperio suo tennet"* (transl. "Turkmens Empire is divided between five brothers, one of them, the leading one, is called Azim Khan, the next are designated Sultans. Only five towns or rather camps are subordinated to them").

The next text is to be continuation of the previous one and it goes: "*Horum Vrgence Principem locum tenet. Incolae Mahumeticam ſectam agnoſcunt, uiuuntque iuxta Nagaiorum conſuetudinem, ac cum Perſarum Principe (uulgo Sophi nuncupato) continenter belligerantur*"(transl. "The period and place of the Urgench Duchy. Habitants practice the Mahometan religion, and live according to Nagai customs and with the duke of Persians (so called Sophi), they permanently wage the war").

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[10] Every one of the texts quoted here is transliterated according to the originals. The two exceptions to the rule the author used are in the cases when the end of the word was for instance "rū". Than the form "rum" was used or instead of "e'" in text author used the end "ae".

For the translated texts of genuine Jenkinson's map from Latin to Polish the author wishes to thank Dr Wojciech Mrozowicz from Wrocław University Institute of History



Figure 5. Northwards of the Caspian Sea in the genuine Jenkinson's map

Some other interesting descriptions are as follows: *"Vrbs Coraſon a Rege Perſico adiuuantibus Tartaris anno 1558 expugnata fuit"* (transl. "The city Corason had been captured in 1558 by the Persian king, who was supported by Tartars"), *"Shamarcandia olim totius Tartariae metropolis fuit, at nunc ruinis deformis iacet, una cum multis antiquitatis ueſtigijs. Hic conditus eſt = Tamerlanns ille, qui olim Turcarum Imperatorem Baiazitem captivi aureis catenis uinctum circumtulit. Incolae mahumetani ſunt"* (transl. "Samarcanda was a capitol of the entire Tartaria, now is in ruinous state, however with numerous ancient relics. It was founded by Tamerlan, who in early times conducted emperor of Turks Bajazyd, who was chained in golden chains. The habitants are Mahometans"), *"Boghar urbs ampliſſima, aliquando Perſis fuit subdita. Ciues Mahumeticam hereſim amplexantur, Perſicaeque loquuntur. Frequentia hic ſunt commercia, tum ex Cataya, India, Perſia, alijsque orbis tractibus"* (transl. "Boghar is the most extentsive city, in early times it was subjected to Persians. The habitants are heretic Mahometans and they speak Persian. There are often trade fairs, /merchants/ come from China, India, Persia and from other districts of different countries"), *"Rex hic aduerſus Caſsachios aſſidua bella mouet, quae gens nuper prope exterminata fuerat"* (transl. "This King is still fighting against Khasack tribes. Once they have been close to be chase away"), *"Princeps hic cum Indis plurimae habet certamina, qui ad auſtrum illi finitimi ſunt"* (transl. "This duke is still fighting with Hinduss, who are his neighbours from the south"), "*Caſcarae princeps Mahumetanus est, ac cum Kirgijs bella mouet*" (transl. "Duke of Caskhara is Mahometan and he is fighting against Kirghiz").

Conclusion: these above mentioned descriptions placed in the map give us quite a rich material on history of the territory in question.



Figure 6. Right hand lower part of the genuine map

5.2. Genuine map from the geographical point of view with a short introduction of the history of cartography of Russia

To examine the subject of the Jenkinson's map from the geographical point of view, it is worth devoting some place to history of cartography of Russia. Obviously, this field is best known by native scholars. One of them is for instance Professor Alexey V. Postnikov. Before we take into account his publication from 2000, we should go back to the ancient times. Here should be mentioned for example Hecataeus of Miletus (c. 550 – 480 BC), Herodot from Halicarnassus (c. 484 – 425 BC), Dicearchus of Messana (c. 350 – 285 BC) or Eratostenes (c. 276 – 196 BC) and of course many others. On the map of the world by Dicaearchus it is the most amazing because already depicted in south-north extension of the Caspian Sea, and as we know this error was presented on early maps up until the beginning of the 18th century, for instance on J.B. Homann's map in 1720 ("*Generalis Totius Impeii Moscoviti"*). As well as on the Dicaearchus map, there is already a symbol of the cartographic net in form of two perpendicular lines – the meridian which crosses Rhodos Island and parallel, so called diaphragma, which start from Pillars of Hercules (Strait of Gibraltar), and it runs to the Himalaya Mountains. The proper shape of Caspian Sea was undoubtedly known by ancient people, what we can learn from the article by Leo Bagrow[11].

On the maps of ancient geographers and cartographers untill the times of Claudius Ptolemaeus (100 – c.168) one may observe the development of geographical knowledge.

[11] Bagrow, L., *Italians on the Caspian,* Imago Mundi 13, pp. 2-10

Some information were repeated together with the development from one to the next generation. This happened with the presentation of the Oxus or Ougus river[12] which was so depicted until the first quarter of the 18th century. As an example can be shown the map by Christfried Kircher of 1734 or J.B. Homann's map of *Kilania* (and different other dates of its editions)[13].

As far as the domestic Russian cartography is concerned, it is necessary to come back to the above mentioned Alexey V. Postnikov's article. We read there that the first document of Russian domestic cartography was so-called "*Nikon's latopis*". The earliest Russian maps initially were composed for small fragments of areas, for instance a vicinities of rivers, meadows, then strongholds, and finally cities. The last were created mainly for military needs. Road maps in turn were created for mission needs to be used by monks. The maps of northern sea lands were made because of sailors' and fishermen's needs. However, despite of existence of much information in Russian transmissions in maps and drawings, practically they had not survived. There are, however, many maps, which have been made by foreign cartographers, who in their diaries or accounts were writing about the politeness Russian natives showed towards the foreigners. They were particularly very helpful in every aspect in terrain. It is even possible that they served some sketch maps of a small parts of a given area like those experienced traders and voyagers of the Muscovy Company. Professor Postnikov writes about the Polish cartographer G. Maintsky, who, according to the Professor, was an author of the world map of 1100, where he already marked Russia as a country situated northerly of the Danube. The next cartographic document where the Russia territory is marked is the famous Ebstorf map of the end of 13th century. On the map Professor Postnikov notices fourteen times the different names connected with the region of Russia.

As far as the territory of South Asia is concerned, we should not forget about the voyages by 13th century latest half traveller Marco Polo (1254 – 1324). Together with his brother he passed the so-called Silk Road (south of the Black Sea and Caspian Sea) and reached China, and, like Jenkinson, later on, Marco Polo passed the same dangerous Bokhara, as well as was a guest on the court of Great Khan of Persia.

From the year 1459 comes the world map by Fra Mauro, however, there is a quite detailed fragment of territory of Russia which is therefore why it should be quoted here (Borodaev & Kontev, A. V., 2007). Very good picture of the part of the region in the book illustrates the fragment of the map (p. 20). We find the description on this map on the next page. On subsequent maps appear more detailed pictures of Sarmatia[14] – for instance in 1513 Strasburg edition of "*Geography"* by Ptolemaeus.

[12] The name Oxus is the Arabic name of Ougus (more read later on)

[13] This map has been kindly indicated by Professor Alexander Podosinov

[14] Sarmatia is the region situated between Vistula river and Caspian Sea. This name became famous thanks to well-known Polish classic writer Henryk Sienkiewicz. In 16th century there was another Polish writer – Matthaeus of Miechov (1457 - 1523, so called Miechowita in Polish), who described this region in his "Tractatus de duabus

16th Century is a golden age of very comprehensive geographical works where the maps became quite often illustrations of the texts. The most famous is so-called *"Cosmography"* by Sebastian Münster (1488 – 1552). In its first edition of 1544 in Basilea we can find the map of Moscovia, as well. However, the real cartography of Russia begins from Dmitry Gerasimov (c.1465 – c.1535), who was the Russian ambassador. He passed his observations on Moscovia to Paolo Jovio[15] (1483 – 1552). Next, Battista Agnese (1500 – 1564) published the Jovius map in his Venice edition of 1554 (reproduction of the map in Szykula's article, 2000).

The next important map of Russia was prepared by Baron Sigismund Herberstein (1486 – 1566). It is the result of his travels to Russia. He was an Austrian diplomat and the messenger of the emperor Maximilian I (1459 – 1519). The map has been made in wood by Augustin Hirschfogel in 1546, and published in 1549 in the book by Herberstein *"Rerum Moscoviticarum commentarii"* and it is the first comprehensive report on the Moscovia State.

Dates 1537, 1542, 1555 and 1570 are the years of subsequent editions of the map by Anton Wied. This one has been made on basis of an information by I(van?) V(asilevich?) Liacky.

Now it is time when the Jenkinson's map should be already described from the geographical point of view. The left-hand half of the map which has been already mentioned in this respect is the richer one than the right. The latter is not only poorer in those physiographical elements but generally speaking in most degree erroneous in its representation. On the other hand it is richer in decorative components. As was already mentioned, the Ortelius rendition is the most faithful to the original map, especially at its left hand part. Vaughan, Earnest Vancourt (1912) was the one who very accurately analyzed Ortelius' rendition.

Obviously many other historians were engaged in analyzing the map, too, but still before the original has been found. After the discovery of the genuine copy of Jenkinson's map we can find the first descriptions on the relation between genuine copy and the Ortelius' rendition: Szykula, K., (1989) in the conference book and Baron S.H., (1993) more comprehensive description. Next in: Szykula K. (1995), Szykula K. (2000).

Now to attempt to analyze the genuine copy in this respect, it is worth remembering some common opinion which was expressed by many scholars, that the north-western part of the map has been made by Jenkinson on the basis of the manuscript map by William Borough (1558) – reproduction in Szykula's, K. (2000), south-western part on the basis of Anton Wied's, but the most erroneous east part by Anthony Jenkinson himself. Obviously, it would be nothing strange that Jenkinson should use the existing maps of his predecessors, but on the other hand such an opinion is to some degree rather unjust. At first, because he himself personally first overcame the roads so far inside Russia and as a first Englishman reached Buchara region at the time - previously Bokhara region have been reached only by Marco Polo. Before the map has been depicted, he has been exploring the western region of

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Sarmatiis" (1517) where he paid attention to the error made by Ptolemaeus regarding the Ripheans and Hyperboreans mountains in lower Moscovia state. However, later on Herberstein in his work (1549) identified them as Ural mountains.

[15] See Rybakov B.A., *Novoodkrytaja karta Moskovii 1525 g.* Otečestvennye archivy, 4. pp. 3-8

Moscovia three times. This shows his great and rather correct knowledge of the way in question, to Persia, too. Some proof makes, too, his detailed diary in which we read about his numerous measurements along the way, by log (distances) and astrolabe (latitudes). He also gives many concrete data on estimated value of latitudes as well as distances in miles or in number of days. The north orientation of his map is the next proof of the modern attitude to cartography, however, known already from the Ptolemaeus atlas, but more innovative to Wied's map, which is, according to its author, an eastern one, but south-eastern because of some elements on the map.



Figure 7. White Sea region on the genuine map

The visual eastern border of the left half of the map reaches the lower course of the Ob river, *"Tiumen"* region, east coast of Caspian Sea, crosses the *"Ougus"* river, and in the southern part of the territory reaches the north end of the Persia and Hindukush mountains, where river Ougus takes its source. As far as the descriptions of the rivers here is concerned, the author asks the reader to be understanding if she will not always follow the principle to describe them from the upper course as it is usually practiced. To continue the subject and going from the south-eastern part there is the Black Sea but it is covered by the cartouche containing the comprehensive dedication to Henry Sidney, as the sponsor of the map. We can only notice the north part of the Sea, i.e. Azov Sea *("Palus Meotis"* in the map*).* In the western part of the Sea is the Dnieper river *("Biri/tines uel neper"* in the map). The river goes from the north reaching its source in the non-existing *"volock"* lake.

Into the Azov Sea flows Don river (*"don uel tanais fl."*). Then it turns to the north-eastern direction, where from the west it leaves the *"Crimea"* region. Further the river passes

"Mordva" and *"Reza"* regions crossing two lakes – smaller one *"Iuan ozera"* and the larger one *"ploglar ozera"*. Finally it reaches the smallest of them *"rezanskoy ozera"*.

Between the two mentioned seas runs two mountain ranges marked with small hillocks, which are almost for sure Kaukaz mountains. The name of this region is marked *"Chirkassi Petigorski*". Below is Kura river (*"Cirus fl."*). To finish the description of the left lower part of the map, it is worth mentioning the cities of the region, but they will be included in the "*Dictionary"* of further *"Monography* ". In this chapter there should be yet considered Kaspian Sea *("Mare Caspium")* with the estuary of Volga river. It changes its names *("Volga fl"* or *"Volga Rha uel Edel fl."* or *"volgha fl.")*. The another one is Ural river mouth *("bogthiar"* & *"Yaik fl.")*. However, coming back to the course of proper Volga going from its estuary in Caspian Sea - its first half of the course is better shown than in other early maps, however we can say that there is not one Volga river! The proper course of Volga river goes from the Caspian Sea under the name *"volga fl.* and *"Volga fl.""*. Then from Kazan *("Cazane gorode")* it turns by 90^0 angle to the west to Nizhny Novgorod *("Niſnougorod"*), next it takes the name *"Volga, Rha, uel Edel, fl."*. Between the city Balachna (*"Balaghna")* and Kastroma *("Caſtrome")* the river takes back the name of *"volga fl."* and just behind *Yaroslav* (*"yearaslaue")* it bifurcate into two Volga rivers. One of them flows to the south *("volga, rha, uel edel, fl.")* and finishes its course in mysterious *"volock lacus"* going subsequently through Yaroslav city (*"yearoslaue")* "finishing" its proper course to Tver *("Tuer")* and then to *"volock lacus"*as *"volga, rha, vel edel, fl."*. The other one *("volgha fl")* reaches White See (*"biatla ozera")*. In the mentioned *"volock lacus"* are also sources of so-called western Dvina and Dnieper river. *"Duina fl"* flows through Vitebsk city *("Widepſky")*. To-day it flows to the Riga Gulf and its source it takes in the Valdai hills (Latvia).Coming back to the Caspian Sea from Volga toward the east is the river Ural, which today flows through Nagaya region (*"Nagaia*"), and in a wider sense Tartaria. In this quarter of the map – in the east side we have yet today Kara-Bogaz Gulf, in the shape of widely extent and long mouth of the Ougus river (Amu-Daria). In this part of the map we have many different regions. Going from the south there are*: "Petigorski", "Astracan", "Chirkassi", Crimea", Mordva", "Rezane", "Volodemer", "Novogardia", "Ceremise Gorni", " "Ceremise Lowgovoi", "Casane", "Vstimia", "Vologda", "Cargapolia", "Meschora", "Dvina", "Permia", "Condora"*, and *"Obdora"*. Coming back to the north-western border of the quarter of the map there is east part of Livonia *("Livonia")* and Lithuania *("Litvania")*. Neva river flows into Finland Gulf *("Sinus Finlandicus")*. In the map Neva takes name of *"volgha fl."*As far as the west-northern part of the western half of the map is concerned, there is one more Volga river but this one are today's Neva and Svir rivers. There are equally two well known lakes Ladoga and Onega, but in Jenkinson's map they change places and sizes with each other. Namely, Onega Lake ("*Ourſhock lacus*") is larger than Ladoga Lake ("*Vladiſcoy lacus*"). Further to the north is situated White Lake *("biatla ozera"*), which is on the way of Onega river ("*Onega fl."*) and the river finally flows correctly to the bay of White Sea, today's Onega Bay. In the north-east fragment of the western half of the map there are yet three great rivers – North Dvina *("duina"*), Mezen river *("mezena fl")* and Petshora river *("Pechora fl.")*. The fourth river Ob makes some kind of the border between west and east half of the Jenkinson map. All of the rivers mentioned here have its own tributaries in the map, but not every one of them is named. One more river in

the western half of the map is Kama river *("Cama fl.")* and Samara river *("ſamar fl.")* as the easternmost tributaries of the Volga river.As has been said, the right hand half of the map is quite a controversial one. It has to be remembered it had been taken into consideration by Ortelius, too, but neglected in de Jode's rendition. In an eastern part of the western Jenkinson's map territory we have only the lower course of the Ob. In the map it flows to North Sea if we translate "*Mare Septentrionale"*, but its source is in the Chinese Lake ("*Kitaia Lacvs"*). From the opposite side of the lake the river called by Jenkinson *"ſur"* flows into the lake. Its source in the map is in Tashkent as far as to Tashkent *("Taskent"*) and probably it is to-day Sir-Darya river with its tributary Zeravshan *("Amov fl.")* Today Zeravshan is the tributary of Amu-Darya river. In the map *"Amow"* river flows around three relatively big cities: *"Coſin","ghudowa"*and Bokhara *("Boghar").*The Ougus river with its tributary *"ardock"* is situated in the southern part of the map and the source of this river is in Hindukush mountains *("montes paraponiſi"*) at the south-eastern end of the map. There is the name *"Mhoghol"* and *"Kirges",* too, in the right lower corner of the fragment. In this part of the map, to begin from the west, are marked following cities: *"Shayſare"* and *"Vrgencz",* and in bifurcation of two rivers *"ardock"* and *"Ougus"* is the city *"Cante".* Further on the river Ougus there is *"Caracoll"* and to the south *"kwſhy".* Close to the *"montes paraponise"* there is a city *"balgh".* In the east we have a city *"Audeghen"*, and a little higher to the west there are: *"Samarcandia"* and *"Arſow".* Close to the upper course of the *"ur"* river is *"Taſkent*", and close to the river *"Amow" – "kyrmina".* In this right hand fragment of the map there are also the names of the regions: "*Taskent", "Marghan", "Tvrkmen", "Boghar", "Kiata",* and as the biggest one *"Tartaria".* Further:*"Cassac", Molgomzaia", "Baida", "Colmack"* and again the biggest ones *"Samoieda"* and *"Tvmen*"(to the west of *"Kitaia Lacvs")* and finally below *"Tumen"- "Nagaia"* region. At the end of this subchapter worth mentioning is one more physiographic element - clusters of forests in Jenkinson's map. Here they are represented very picturesquely by smaller or wider clusters of the forests in the form of the trees which are not distinguished as the deciduous or coniferous forests, but overlapped one on another. Fauna, the topic which somebody would include in the physiographic elements, here is to be reviewed together with the ethnographic content of the map.

5.3. Mathematical basis of the map. Experimental attempt to the method of examining the differences of the old maps and their cartographical nets by means of the nets of triangles

The distinctive feature of early maps are different scales on the same map. It is because the cartographers compiled different maps which were made by using a different scales. Hence, we can observe numerous errors in several parts of the maps. According to numerous measurements of the distances made by the author the average scale of Jenkinson's map occurred to be about 1: 5 083 871 (Szykuła, 1995). Whereas, the scale which has been counted on the basis of three scales on the map, i.e. in Russian miles, English and Spanish miles , according to professor Baron has been assessed to be between 1:6 000 000 to 1: 7 800 000 (Baron, 1993).

The other reason of the distortions in the early maps was obviously the imperfection of the measuring instruments used then. In 16th century there were used so-called logs for measuring the distances. Jenkinson used it for instance during his journey by Volga river, whereas for measuring the latitude he used so-called astrolabe, the most popular device in 16th century which enabled him to measure the position of the sun or stars. This instrument was still modernized and used until the 18th century. As far as the designation of the longitude is concerned, it was still a very difficult task at that time. Therefore Jenkinson in his map marked only latitudes on the frames of the map. The map has no cartographical net. It was the reason why the author used her own method in the form of a rectangular net to show the differences between the examined maps and in the same way to try to determine its projection. Simply because well-known distortion net is possible to be used only if the cartographical net is used. The method the author first time has shown in 1994 during the implementation of the grant Project given by so-called Polish "State Committee for Scientific Research" (in Polish KBN). Then, the author invented the method and shown in graphic form in two poster sessions on Zurich (1994) and Vienna Conference (Szykuła, K., 1995). Next in a sketch description in the publication from the national Conference in Pobierowo (Szykula, K., 2008). However, its final graphic result the author is going to present in her *"Monograph"* – then to be evidently proven by specialists of geodesy. Now short description should be presented to the readers to let them see what is a basic principle of this method.

The nets of triangles have been depicted on every one of the maps, including contemporary maps, which have been chosen to be compared with Jenkinson's and other 16th century maps of different authors. The number of triangles could be assumed by the author himself. In case of Jenkinson's map it has been used ten triangles. The points of cities, mouth of rivers and so on have been used as a vertexes of the triangles. The triangle nets to be compared were fixed in two position – first in natural position (according to the lower frame of the map), i.e. the given orientation and the second one according to one of the side of the triangle which has been chosen by the author, but fixed vertically for every one of the maps the same. In this way it was possible to observe how the whole given figure turned out and how subsequent triangles changed its angles, surfaces and sides of the triangles. Sometimes they changed not only their shape, but also vanished at all or they overlapped. Every figure with precisely measured angles of the triangles had been then introduced to the computer in a special Program. The results on the printed triangle nets were noticeable at the first glance. It was especially interesting when we turned the figures according to the same vertically fixed side of the given triangle. Then we could define closer an orientation of the map, as well as to compare the triangle nets depicted on contemporary maps, too.

Summing up the benefits of the method we can shortly mention them as follows: 1/ possibility to identify the non-existing projection, 2/ to notice the differences in the localization of the subsequent points as cities, mouth of rivers and so on, 3/ to define an orientation of the map and 4/ to find most uncorrected places in maps of our interest according to subsequent triangles.

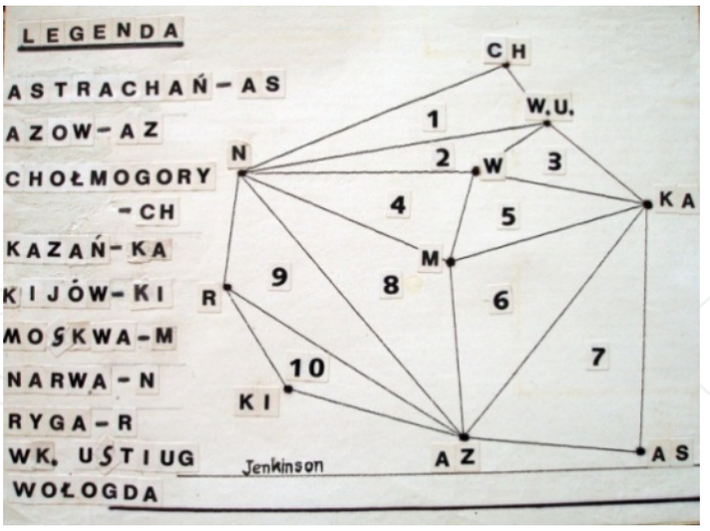


Figure 8. The triangle net from the Jenkinson genuine map - an initial (basic) figure to be compared with every other maps (the sketch and legend in Polish because it has been made in Polish Project then)

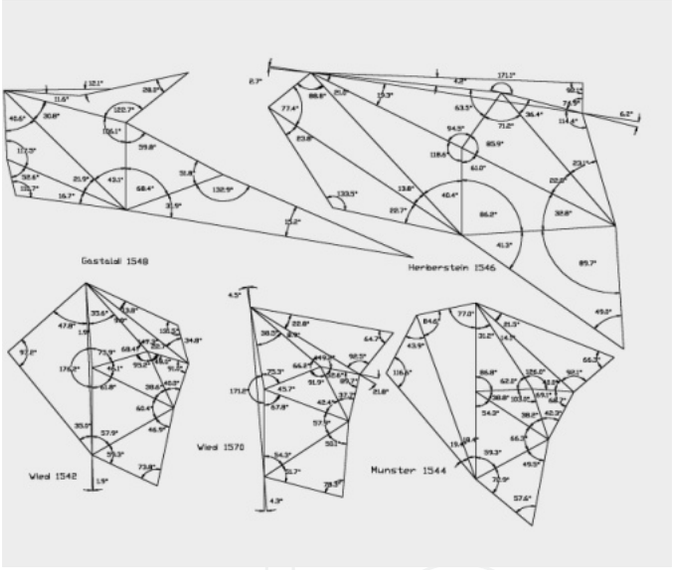


Figure 9. Triangle nets of the same region from maps of Russia by different authors (author of the whole conception Krystyna Szykuła, the triangle nets introduced to a computer program by Mariusz Ożarowski)

Going back to our map, the above mentioned method clearly has shown the innovativeness of our genuine map and the similarities between renditions and the genuine copy of the Jenkinson map. Amazing similarity the author has found, too, if a figure of the one of contemporary maps of the territory in question has been taken. Then it evidently occurred that possibly Jenkinson used a similar or even the same projection which has been used in the contemporary map.

From the geometrical point of view Jenkinson's map is undoubtedly quite innovative. The same conclusion concerns an orientation of the map when we compare two figures - taken for instance from Jenkinson's and Wied's map.

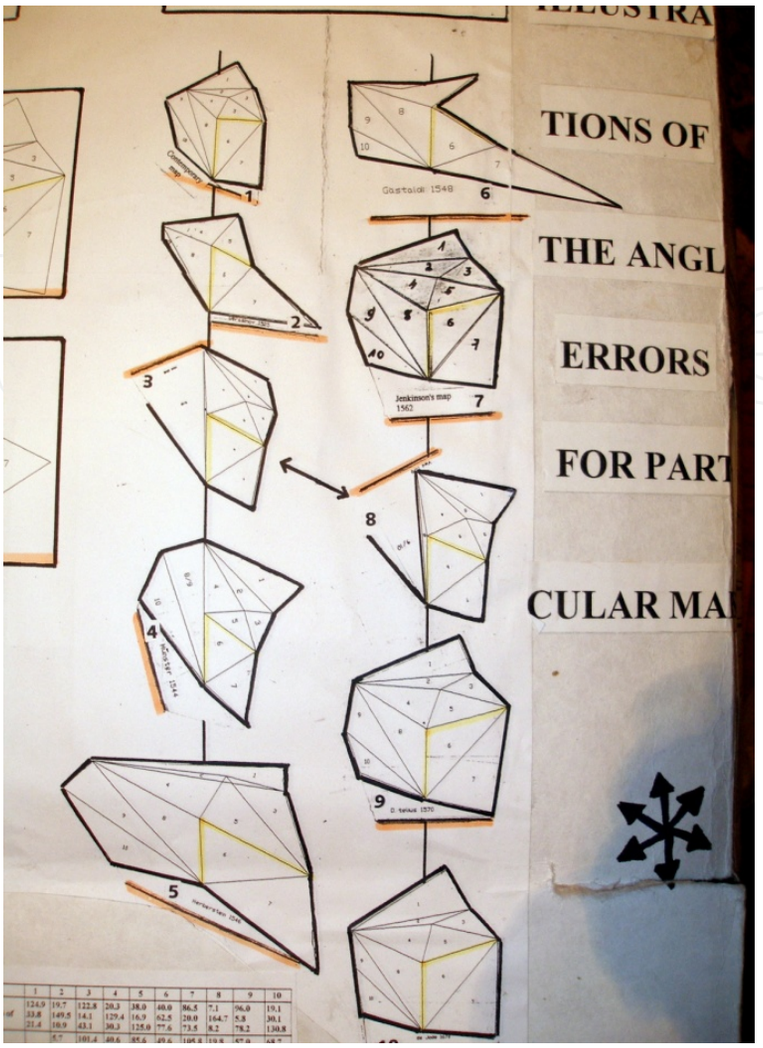


Figure 10. Triangle nets depicted on maps of different authors being compared with Jenkinson's map. They are fixed vertically according to one common axis Moscow-Azov. The fragment of the poster presentation in mentioned Zurich and Vienna Conferences

5.4. Ethnographic content on the Jenkinson's map, including its fauna

As far as the ethnographic elements in Jenkinson's map are concerned, it is exceptionally rich, although this is rather typical for the 16th century maps. However, it can be an outstanding source of information for the specialists of different fields[16]. In this respect the genuine copy significantly dominates over its renditions. Although fauna is usually joined with physiography, however, in this article the author decided to join it with ethnography because the human being from the earliest times has lived with animals to use them as the means of transport and, unfortunately, as the foodstuffs, too. As the means of transport we can see numerous camels and as the means of food we can see hunters with their trophies.

[16] During the Polish Project 1994/1995 the author found interesting work in Antwerp Plantin Museum by B. Vuylsteke, entitled "Het Theatrum orbis terrarium van Abraham Ortelius (1595). Een studie van decoratieve elementen en de gehistreerde voorstellingen (unpublished Ph.D. thesis), Louvain 1984.

We can also notice the connections between animals and people in so-called numerous genre scenes. There are camps of Cossacks, Tartars, Samoyeds depending on the given region in the map. From the human figures there are mostly warriors of different kinds depending on the region they are depicting. The warriors are equipped with a bows. Especially in the left part of the map we can notice many warriors who are shooting with the bows. In the east in turn we have already mentioned procession of the figures of sitting khans. There are also some dog-teams or deer-teams in the north of the map territory and camel-teams in the middle of the map – north of the Caspian Sea. In this fragment of the map we can see herds of sheep and tarpans, too. In the south-eastern part there are even panthers in Tashkent region. In the east are hordes of Tartars living in characteristic tents. Worth to draw attention to are two-wheeled carts, to which camels are hitched. Numerous horses are used to horse riding, furnished with bows or lances.

There are three religious scenes. First of them in the upper right corner close to camp in "*Colmack*" region (the Khanate of Sibir at that time), is the scene where the group of a few believers worships the sun. The comment on the map to this scene goes as follows: "*Molgomzaiani, Baidai, Colmachij, Ethinici ſunt, ſolem, uel rubrum pannum, de pertica ſuſpenſum adorant. In castris uitam ducunt, ac omnium animantium, erpenitum, uermiamque, ac proprio idiomate utuntur.*" (transl. "Molgomzaians, Baidais, Colmachias, they are tribes, who worship the sun or a coat which is erected up on the perch. They lived in strongholds and use all the creatures as snakes and every of worms, as well as they use their own way of speaking or language")

The next object is worshipped by Samoyeds. It is so-called Golden Woman (Zlata Baba in Russian). The figure of the woman is sitting on some kind of pedestal and holding a small child. In Jenkinson's map it is situated in *"Obdora"* region, between the mouth of Ob toward the sea and the unnamed mountain range. Undoubtedly it is the North Ural. Quite a long description on the scene in Latin is placed on the opposite side of Ob river where we read: "*Zlata Baba id eſt (aurea uetula) ſedet, puerum ad genua tenens, qui nepos dicitur, ſtatua haec, ab Obdorianis, et Iogorianis, religioſe colitur. Qui laudatiſſimas, et maximi precij pelles Zebellinas Idole huic offerunt, una cum reliquis ferarum pellibus. Ceruos etiam ſacrificio mactant, quorum ſanguine, os, oculos, ac reliqua ſimulachri membra ungunt. Inteſtina uero etiam cruda deuorant, sacrificij autem tempore, ſacerdos Idolum consulit, quid ipſis faciendum, quoue ſit migrandum, ipſumque (dictu mirum) certa conſulentibus dat reſponsa, certique euentus conſequuntur.*" (transl.: "Zlata Baba (Golden Woman), is seated and holds a boy-known as the ancestor at her knees. Obdorians and Iogorians worship the statue of Golden Woman and offer her their most valuable animal skins. They sacrifice deer to her, smearing the mouth, eyes, and other parts of the goddess with the animals' blood. They eat the entrails raw. During the sacrificial ceremony, their priest asks the goddess for advice, and strange to believe - receives credible answers, and certain incidents follow", see fig. 6)

Above mentioned pedestal with "Zlata Baba" has been used not only by Jenkinson but by Herberstein, Mercator and Wied in their maps as well. However, in every of these maps they differ from each other in subsequent representations. Accompanying descriptions on every of these representations on these maps are different as well.

Third interesting religious scene is the picture in Kirgiz region as follows: "*Kirgeſsi gens eſt, quae cateruatim degit, id est in Hordis, aβidueque cum mhogholis gerit, habetque ritum iſtiuſmodi. Ipsorum untiſtes aut ſacrificus, quo tempore rem diuinam peragit, ſanguine, lucte et fimo iumentorum acceptis, ac terrae mixtis, ac in uas quiddam infusis, una cum hoc arborem ſcandit, atque hinc diu uel populum concionatus, in ſtultam plebeculum ſpergit. Populus uero in terram pronus, adorabunduſque, aspersiunculam hanc pro deo colit: firmeque credit, nihil eſſe perinde ſalutare ac terram, pecus, armentaque et cum quis inter eos diem obit, loco ſepulture arboribus ſuſpendit*."(transl. "Kirgiz are tribes who live in teams, i.e. hordes, they still are at war with Mongols and practice their own ritual: their priests when they are serving the God make an offering. They take the blood, milk and cattle excrements, mix them together with a soil and pour to the dish. Then, the priest takes this mixture and climbs up a tree and next has a long teaching talk he spreads the mixture blessing the people. For the people who are bowing to the ground it means to be worshipping the idol (God?). He probably considers that it is more important to bless from up than from the ground every animal or people. As far as the dead people are concerned they are hanging here on the trees instead of being buried.

We can classify the signatures of the cities rather to decorative elements, however they were popular in 16th century maps. The examples can be picturesque signatures of *"Vſtiuge"* (Veliki Ustiug), *"Tourſhock"* (Toržok) or *"Cazane gorode"*(Kazan)

5.5. Toponymy on the Jenkinson's map; the language and ortography

Toponymy and the orthography on the Jenkinson's map has been already considered by the author in her article (Szykula, K., 2010), published in a special jubilee volume devoted to the 50th work anniversary of Professor of the Stettin University Olga Molchanova = Molczanowa or Molčanova (*Ad Fontes*, 2010).

In the first part of the paper the author shared with the readers her remarks, doubts and difficulties, which accompanied her during the creation of the dictionary being in preparation. The cause of the difficulties were the differences in the orthography on every of the examined maps. We sometimes meet interesting phenomenon on some of the maps where the represented region is not a native for given cartographer. This happens for instance in case of Mercator's and de Jode's map when they marked the same cities many times because of the different versions of their names they met on several maps. In Mercator's map it concerns for instance Polish city Bydgoszcz which takes following names to be in fact the same city. There are: "*Bromberg"*, *"Bidgostia"*, *"Bizgelaw"* and *"Biltgotz"*. In de Jode's rendition of Jenkinson's map there are in turn: "*Bobroueſko"*, *"Bobranſko" and "Bobrouensko"* (to-day Bobruysk in Russian).

In the mentioned article the author was comparing the toponymy on different 16th century maps in their relation to the Jenkinson's map. Examined in this respect were Wied's map, by brother's Doetecum (so called Daškov[17] = Dashkow map), Sigismund Herberstein and

[17] Pavel Jakovlevich Dashkov (1849-1910) was the bibliographer and collector of the historical documents to St. Petersbourg in which the Doetecum map has survived and now is in the State Historical Museum in Moscow.

Giacomo Gastaldi (1500 - 1566) – map of 1551 (in the map itself the 1550 date has been written).

When we are examining toponymy we take into account such physiographic elements as: mountains, rivers, lakes, gulfs or bays, islands, peninsulas but as well as names of cities, ethnic or administrative names and every other elements that bear the geographical names in the maps.

The other phenomenon is when the names differ sometimes only in their orthography, but in some cases there are quite unrecognizable changes to the names. To mention some of them there are for instance: *"Kinieshma"* in temporary map, *"Kmysma"* in the Jenkinson's map, "*Kmÿshma*" in Ortelius' rendition and *"Kmijshma"* in de Jode's rendition. If we compare the genuine Jenkinson's map with Doetecum map there is for instance *"Choghloma"* in Jenkinson's and *"Czohloma"* in Doetecum map.

The case is very interesting if we compare Jenkinson's map with Wied's map. The latter used so-called Cyrillic script, not only for the names but for the quite comprehensive text situated in the bottom of the map as well.



Figure 11. Fragment of the cartouche from the Wied's map of Russia

The names in question have double forms – in Latin and Cyrillic script. The next question is how the two editions of the Wied's map differ from each other. In his map of Moscovia

published in 1542 there is the city *"Wollozeck"* , but in the edition from 1570 – there is the version *"Wollo∫ek"*. Interesting as well as is the name of then north sea in Jenkinson's and Wied's maps. Jenkinson called it *"Mare Septentrionale"*, whereas Wied (1542) – *"Mare Sarmacia"*.

Jenkinson's map in relation to Herbestein's and Doetecum map gave interesting results in case of the name "Kiev": in Jenkinson's the name of the city is *"Kiou"*, in Herberstein – "*Kiow"*, and in Doetecum – *"Kioff"*. In Wied's map we have even a typical Polish letter "ę" in the sentence *"Dux Mo∫covię tranſfert"*. To summarize, the mentioned subject has been here only touched. In *"Monograph"*, however, it will be obviously extended. As far as the Borough's manuscript map is concerned we can find the similarities, but not in every respect. There are some cities or other geographical names which significantly differ geographically. We then may raise the question if Jenkinson used Borough's map at all as a model in this small north-western part of Russia.

6. Intriguing geographical elements in relation to the 16th century geographical picture of Russia

Taking into account the most intriguing geographical elements in the Jenkinson's map we have to mention: northern Volga river, lakes: *"volock lacvs"* and *"Kitaia Lacvs"*, as well as the rivers *"Amow fl."* and *"Ougus fl."*

Every of the mentioned elements has been already considered in Polish articles published by the author (Szykuła K., 1995 & 2000) and in one published in English (2005) – available in the Internet, too. Unfortunately, the latest has been limited by the editor and therefore it is there not in its original form and without most of the figures.

The problem of north Volga river has been already described in the subchapter on the physiographic elements. To remind it, the error is a consequence of the incorrect name of the Volga river, because instead of *"Volgha fl."* it should be there today's Neva, Swir and Volkhov rivers. Quite a rich history have already the so-called *"volock lacvs"*. We can find some information in very useful 18th century dictionary of geographical names *"Historisch=Politisch=Geographischer Atlas, 1774-1750"*. This is the German version of the French Lexicon by Bruzen de la Martiniere. Under the head *"Wolochs, Volock"* we read there (in transl.): "*the city in Russia, see "Wolocz"*, and there: *"a small city in State Russia in the province Rzeva, on the border of the Dutch of Moscovia, not far from the Fronowo Lake, on the outer edge "Wolkonsky Forest"* (Volkonski les in Russian). The description could be correct in respect of the place of the lake in question in the Wied's map, however, this author carefully left this lake without geographical name. Herberstein placed the Fronowo Lake at the source of Dvina as *"Dwina Lacq."* We find another explanation in the history of cartography by well known Polish historian of cartography Stanisław Alexandrowicz in his book on the history of cartography of Lithuania (1989, p. 57, footnote 25). He considers there that the incorrect information has been found in Polish historiographer's Jan Długosz *"Chorographia"*, and he quotes *"Annales seu cronicae*", lib. I, p. 99. There the author of the work writes about a big lake or marsh which lays 30 miles from Smolensk towards Novgorod, where three rivers

have their mouth: so called western Dvina, Volga and Dnieper. This information has been used again by famous Polish cartographer Bernard Wapowski. He placed the lake in question in his not surviving map of the Northern Sarmatia. Then, the information has been taken over again by Wied and placed in his map. Finally, the lake's name has been retaken by Jenkinson. According to Professor Alexandrowicz (1989) the name of the lake comes from the city *"Wyšnij Woloček"* (Wyshni Wolochek). In turn in above mentioned map from 1525 (Gerasimow-Jovius-Agnese map) this lake is called *"Palus magna"*, and there meets Volgha, Dnieper, Dvina, and additionally to Jenkinson's representation – the Neva river. Professor Samuel H. Baron (1993, p. 58, footnote 10) gives some other conception. He claims that this mistake comes from Gerasimov and then from Münster's map. This mistake could be also explained by the translation of the word *"volock"*– in Russian language it means "the carriage across the river". Then, it could be understood as the lake, especially that the terrain on which the lake is situated is full of marshes. The lake could be also identified with mentioned here Fronovo Lake, which is also mentioned by Jovius (Baron, S.H., 1986) and was confirmed above by the quotation from the Bruzen de la Martiniere Lexicon on the lake.

The next problematical element worth to be considered here is *"Kitaia Lacvs"* which has been already discussed several times in many articles, and which representation has been depicted on numerous maps. The number of conceptions, too, was presented. However, in spite of so many theories, which based on quite a real research results, it is difficult to resist an impression that both in shape and in its relation with the river Sur (Sir-Darya today), the lake can be automatically associated with the Aral Sea. Especially that it does not exist at all in its proper place in the Jenkinson's genuine map.



Figure 12. "Kitaia Lacvs" and Ob river in Jenkinson's map

Quite different but interesting is the attitude of the Russian scholars to this open question. In *"Zapiski"* by Herberstein (Gerberstein, S., 1988, footnote 546, 547), there are following theories presented by different scholars. As far as the Zajsan lake is concerned it has been

considered by A.F. Middendorf as an "*Upsa=Ubsa Nur*" or "*Uvs nuur*" by G. Genning and M. P. Alekseev, as the Aral sea by G. Michow , L.S. Berg, and K.M. Ber, and as the Teleckoye lake by A.Ch. Lerberg and D. N. Anucin. To the mentioned conception refer another Russian scholar, Vadim F. Starkov (1994), who writes about the participation of Gerasimov in creating the theories, like that of above mentioned professor Baron. Aleksey K. Zaytsev focuses on *"Teleckoye Lake"*. He explains that Teleckoye Lake is placed on the way of the Ob river, or rather its tributary called Bija, which joins with the Kotunia river and they create the Ob river. The note we can consider as the real one if we take into account mentioned here *"Historisch=Politisch=Geographische Atlas"* (Bd. 1, 1744,; Bd.4, 1746,), where under the entry we read (in transl. from German): *"Kitaius lacus"*, so is in Latin named a great lake in the Kingdom of Altin, see "Altin" and then under the entry *"Altin"* we read – so is named (by somebody) the lake, which is situated in the eastern part of the kingdom of the same name. The completion of this information we find in another geographical dictionary (Ščhekatov, 1808, č. 6, v. X, columns 164-165), where under the entry of the "lake" we read that the lake bears as well the name *"Altyn"* or *"Altaj"*[18] and is situated in Tomsk Gubernya, and Kuznieck district. Having so many conceptions, it is necessary to consider their reliability. Then, we should look at lakes' geographical placement. Every one of the lakes is situated in the mountain region, close to the Altai mountains. When we look at the Jenkinson's map, east of Kitaia Lacvs, he depicted high mountain range. As has been already said, Teleckoe Lake is situated on the way of Bija river – the tributary of the Ob river, whereas the Zaisan Lake on the Irtysh river the tributary of the Ob river, too. Only Upsa is not connected with the Ob river. The latter is in most degree in the shape of "*Kitaia Lacvs"*, because two other have, using the geographical vocabulary, the shape of finger lakes. There are, however, many indications against these theories on the three lakes. Mainly because they are situated far away to the east from the territory represented in the Jenkinson's map, i.e. above 1500 km. from the Aral Sea. The Altai mountains are situated to the south-eastern direction, but not in northern Siberia. On the other hand, the Teleckoye lake could be accepted to be "*Kitaia Lacvs*" because of the reasonable argument which has been already mentioned above and quoted from the geographical Lexicon by Bruzen de la Martiniere. Simultaneously we know that neither Jenkinson nor Herberstein entered so far in the Asia interior. They had been not able to get in so high ranges of mountains and because of wild tribes living east of Bokhara region. Then, to be remembered, there is yet the possibility that the Lake was retaken from Gerasimov, what has been already mentioned in Starkov's work (1994) and confirmed by S.H. Baron (see above).

Then, maybe we should return to the Aral Sea conception. As it was already mentioned about its shape and the course of river Sur (Syr-Darya) there is *"Amow"* tributary of "*Sur"* river, too. It seems very unlikely if Jenkinson, who travelled across the territory between the Mare Caspium and Tashkent including Bukhara region, did not notice such a great lake as the Aral Sea. We are obviously not talking about today's drying up lake.

[18] Special work has been devoted to this "country" by two authors: Borodaev, V.B. & Kontev, A.V., Istoričeskij atlas Altajskogo kraja. Kartografičeskie materialy po istorii Verchnego Priob'ja i Priirtyš'ja (ot antičnosti do načala XXI veka). Vtoroe izdanie, ispravlennoe i dopolnennoe". Barnaul, Azbuka 2007 (in the Bibliography here, English title, too).

However, coming back to the previous thought, that is *"Kitaia Lacus"*, at the times thanks to brothers Boroughs' voyages (Baron, S.H., 1989 & Mayers, K., 2005) there was known only the lower course of the Ob river, and yet before the Jenkinson's map has been made. Then it is very probable, that Jenkinson, who did not know the further course of the Ob river, could add up information acquired by the mentioned brothers with his own information collected during his second travel to Russia, when he reached Bokhara. Hence, he made similar mistake as Wied on his map - to join two pieces of news together - because he did not know the territory between the lower Ob river and the Ougus river. That is why there is also Sur extended to the south and the Aral Sea shifted too much to the north that was Wied's some kind of idea or trick done by eliminating the unknown territory.



Figure 13. Funeral ceremony by Kirghizes

On the other hand there are still many unclear points in the presented "discussion". We should raise the question, why under the entry *"Arall"* in the quoted dictionary by Bruzen de la Martiniere there is only a short description on the settlement of the same name. *"Arall"* as a sea is only briefly mentioned there, however in the same dictionary is that the view is so great as the sea! Another argument which indicates that the Kitaia Lake is the Aral Sea is the opinion expressed by zoologist J. Bartmańska[19], who claims that these kinds of animals as camels, tarpans and sheep should be presented on the latitudes $45^0 – 52^0$ but not on the $60^0 – 65^0$. However, some of them are situated in a correct place, too, for instance in northern direction of the Caspian Sea in the genuine map. We know that the latitude of the Aral Sea is about 45^0 and there is Kyzyl-Kum desert but not the region of the high mountains as it is

19 According to the manuscript expertise made during the Polish grant (1994/95) in the form of the order.

shown in the Jenkinson's map. Whereas the existence of the camels and sheep on the same latitude as *"Kitaia Lacvs"* and between the mountains steppes indicate in turn the Altai mountains. Then, as we can see, solving the problem is not so easy and probably it will be never solved. Some final conclusion could be supported, too, by the description of the name "*Kitaya*" in Wikipedia under the entry "*Kitay-gorod*".

There is one more interesting geographically questionable element in Jenkinson's map. This is the Amu-Darya river which as Ougus flows into the Caspian Sea. The problem have been already interestingly and accurately described by many authors (Menn G.F.C., 1839, Alenicin V.D., 1879, Barthold W., 1910). As have been here already mentioned the representation of the mouth of Ougus river can still be found in the 18th century maps. The history of the mouth of Amu-Darya from the oldest times had been very accurately described by G.F.C. Menn in Latin[20]. There are some interesting testimonies which we can find in Herodot's work in following sentence (translated: "the biggest river in this region is "*Arakses"* or "*Oksos"* and that one of the branch flows into the Caspian Sea"). What is interesting, he also calls the river as "marshes of Aral". Alenicin in turn asks himself a question – which way Jenkinson has gone when, as he writes in his diary, he met so-called "priasna" water, i.e. sweet water. The author comes to conclusion that at some point Jenkinson had to confuse the directions of the world. Alenicin realized that if Jenkinson met a sweet water it could be neither the Aral Sea nor the Caspian Sea – it must have been probably Sary-Kamysh – a big lake situated between the Caspian Sea and the Aral Sea, because it goes from Mangyshlak peninsula across the Ust'- Urt'. On the 12 page of his book Alenicin writes about yet another conception. He there claims that in 1878 came into the Caspian Sea a branch of the river which probably reached it. Interesting description on Amow river (a tributary of the Sur river on Jenkinson's map) we read in already quoted geographical dictionary (transl.: *"Amou or Amu it is the river of Asia, which by our contemporary geographers is named Amu. Because "Ab" word in Persian means water or river. Arabs call it Gibon, but accurately Balkh, river Balkh, because it flows across city of the same name. The old called it Oxus and Bactus. This river flows out from the Imaus mountains and directs its course from the east to the west. As a matter of fact, when it comes close to the Khovarezm country, it runs in meander way, and seems to flow to its source direction, however it comes back again, and flows into Caspian Sea in the west").* It is worth here to quote before mentioned Menn (G.F.C., 1839). In his book in the chapter I entitled *"Oxi fluminis vetustae navigationis in mare Caspium documenta"* on 5th page we read (transl.:"…Oxus flows into the Caspian Sea across Scythia…" W. Barthold (1910, s. 68), who discusses the Jenkinson's map writes (in transl.: "south branch flows to the lengthened gulf of the Caspian Sea, i.e. Sary-Kamysh" (see Tolstov 1962, pp. 261-267*)* where the author writes that the river Amu-daria at the beginning of the 10th century had flown into the Caspian Sea. This Russian archeologist Tolstov (1953, p. 62) recalls Jenkinson's opinions from his diary, which are opposite to his map's picture. Namely, Jenkinson claims that the water in his times did not flow into the Caspian Sea as it was in the early times. So

[20] For translation of the fragment of this interesting work I would here like to express my gratitude to Aleksandra Krajczyk, the teacher of Latin at the University of Wrocław.

we may presume, that the picture of the Ougus river in his map has been simply retaken from Ptolemaeus' map of this territory. The history of this early course of Amu-Darya comprehensively describes S.P. Tolstov in his another book (1962, pp. 17 – 26), where he gives the bibliography of this subject.

Every one of these theories could be taken into account in the light of the interesting text quoted in Internet from the famous book by Ryszard Kapuściński. In this description we are told a beautiful story of the Uzboj river, which was examinated by yet another Russian archeologist A.H. Jusupov. The story has been told to Kapuścinski by a local called "Raszyd"(Rashyd). The author writes: (transl."Raszyd has shown me on the map the course of the Uzboy river. The river Uzboy has taken its waters from the Amu-Darya river, the river has flown across the desert Kara-Kum into the Caspian Sea. It was a beautiful river – long as the Seine river. This river died, as he said, and from the time of its death the war begun.")

7. Coclusion

In the article, the author tried to show a kind of sketch of the further full *Monograph* on the Jenkinson's map. The first conclusion which is easily noticeable is that the subject in question constitutes an inexhaustible material for investigation from different points of view. What one could notice if we enter more deeply into some of the described questions is that every one of them opens new paths to be further investigated. After all, we have here following questions: the history of geographical discoveries in Asia, relations between the two continents, Europe and Russia in relation to Asia, and next the subsequent regions – their history, ethnography, especially connected with Cossacks and Tartars, the history of links between England and Russia[21], history of Persia, including the history of consecutive khans. In this subject it is difficult to neglect the Russian relations to the western frontier states or historical regions which, especially at that times, were Lithuania and Poland. Characteristic and equally very interesting is that the stories of several regions and states connects with one another. Thanks to this phenomenon new topics still emerge and it is difficult to resist them. New and equally very interesting riddles still arise. The sources which needed to be compared were very exciting for the author. Such was for instance the story of the course of the Amu-Darya river and the Aral Sea in connection with the *"Kitaia Lacus"* as well. Very interesting is the interdisciplinary character of the subject in question, too. For instance, some evidence is the participation of the archeologists in the examination of the bed of the Amu-Darya river, its significance and results. To continue the idea presented by the author it could be also worth using the infra-red pictures to confirm one more argument for the theory of the old river-bed of Amu-Darya. We can say the same about the other questions considered here. The long-lasting investigation of the author and the rich literature create valuable occasion for scientific contacts with other authors in the world. It was a very valuable exchange with mentioned here Professor S.H. Baron, Dr. K.

[21] This investigation entitled *„Cartographical links between England and Russia in mid of 16th century"* has been carried out in the British Academy Project by the author together with Magdalena Peszko in 2011.

Mayers and Dr. Osipov Igor A. (2008 and 2009). We can notice that the papers by many other scholars of the western Europe and of the USA already mentioned here that were issued brought benefits for the subject considered here from the time since the Jenkinson's map has been rediscovered (1987). The subsequent papers by the author during the period as well tried to enlarge the field of the investigation and still are bringing new reflections.

Therefore the author hopes that the full version of *Monograph* will bring much more valuable results and will do its good for the Jenkinson's map and its examination.

At the end, summing up the benefit of the rediscovered genuine copy of the map in question we should answer the question "what has its recovery brought?" There are as follows:

1. Quite a new image of the Jenkinson's map – both in general view and its size.
2. The confirmation of the territorial range which has been portrayed by Ortelius and territorial discrepancy of de Jode's rendition.
3. The differences in arrangement, number and the contents of cartouches and boxed texts placed in them in every of these maps.
4. The knowledge of the two new co-creators of the genuine copy of the map. They are the engraver Nicolaus Reinoldus and the editor Clement Adams, who both to the very moment of rediscovery were not connected with the map in question. The notice directed to the printer Reginald Wolf and the painter Jan de Schille should be not neglected as well.
5. The knowledge of the much richer content in relation to the original and renditions in all elements as: genre scenes, boxed texts, decorative borders and so on.
6. Jenkinson was the first who determined the distance and the direction to China by means of the description which he placed in the lower right-hand corner as follows (in translation from Latin to Polish and then to English): *"Thirty days of the travel in the eastern direction from Kashkhar begins the frontiers of the Chinese Empire (Cataye). From this frontier is three-month of travel to Cumbalcu"(*= Cambaluc – the early name of Beijing, now Peking). However, we also know that in the place of Siberia region *"Regnum Cathay"* Waldseemüller puts in his world map of 1513. Hence maybe *"Kitaia Lacvs"* taken his name.
7. We can presume, how it happened that the genuine Jenkinson's copy has been found in Wrocław city. Probably it was sent from Antwerp or from Ortelius himself to one of the learned officials in the city who were in close relation at that time. The author could drawn this conclusion thanks to the examinations by Curator of maps Joost Depuydt at Antwerp FelixArchief who carried out the investigation on Ortelius' activity. However, this is not yet proved by appropriate document because of the huge amount of correspondence to be read and dispersed in different places of the world, among others in Wrocław University Library or Harry Ranson Humanities Research Center (from the paper kindly sent to the author by Professor Christian Coppens)
8. Unfortunately, an information on one more copy of the genuine Jenkinson's map which was said to be found in State Library in Leningrad could be sensational if trustworthy. It appears to be untruthfull, and has been given by Leo Bagrow in his article in Imago Mundi 5, 1965, p. 62 . Reprint edition of 1925 I.M.



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