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Karlowitz, Treaty of (1699). The peace treaty of Karlowitz (Karlovic, Carlowitz, Karlóca, Karlofça), signed by representatives of the Habsburg and Ottoman Empires at Sremski Karlovic (Serbia) on 26 January 1699, marked a turning point in the history of the Turkish Wars and changed the balance of power in Europe. The great territorial Ottoman conquest in Europe of the mid-sixteenth century had been followed by a gradual decline of Ottoman power in the seventeenth century. Shortly after defeating the second, unsuccessful Ottoman siege of Vienna (1683), the army of the Holy League (Habsburg Austria, Poland-Lithuania, Venice) recaptured Buda (1686). The Turkish army was then further defeated in a series of open field battles in southern Hungary. After the battle of Zenta (Senta) (1697), Sultan Mustafa II agreed to negotiate. Negotiations between the representatives of the Holy League, Russia, and the Ottoman Empire began on 25 November 1698 near Karlowitz, with representatives of the Netherlands and England also present.

During negotiations, the Ottoman interpretation of the *uti possidetis* (as you possess) principle was accepted. The Turks had demonstrated that they were equal to the Christian powers militarily and would not agree to accept any definitive territorial loss (Stoye 1994, 164–215). The negotiations required very delicate diplomatic treatment of these matters, with heated discussions threatening to break off negotiations. However, they concluded with the former Kingdom of Hungary and Transylvania, except for the district of the Banat of Temeswar, being transferred to Habsburg Austria. Yet due to the conflicting interests of the European countries, the Habsburg victory was not reflected in the document. Venice regained Dalmatia and Morea (Peloponnese), and Poland, which returned Moldavia, regained Podolia and a large part of Ukraine. Only a two-year

armistice was signed with Russia. The peace treaty concluded with an international agreement signed by the parties demarcating, for the first time in the region, an international border. The border was described in the articles, but its actual demarcation in the field was the duty of joint border demarcation commissions. Luigi Ferdinando Marsigli led the Habsburg border demarcation party, and the Ottoman commissioner Ibrahim led its Turkish counterpart.

Due to Marsigli's previous travel and survey work, Habsburg military and political interests were much better represented during the practical demarcation from 1699 to 1701 of the 850-kilometer Habsburg-Ottoman border. According to the procedure proposed by Marsigli, the two commissions followed the borderline from both sides; each section of the border was described, surveyed, and mapped in minute detail. In places where natural features did not suffice, artificial border marks were constructed, and an area was measured constituting a two-hour walk on both sides of the line (Stoye 1994, 164–215). A special marker was created for the Triplex Confinium, the confluence point of the Austrian, Venetian, and Ottoman borders near the fortress of Knin (fig. 426).

For each border section a report was made for Vienna and usually maps were enclosed with the documents (fig. 427). Hundreds of maps and views were made by Marsigli's assistant, Johann Christoph Müller, later imperial cartographer. Müller, an excellent astronomer, surveyor, and draftsman from Nuremberg, put Marsigli's ideas on paper and constructed overview maps of the border area after 1702 (see fig. 101). Müller also prepared early thematic maps to illustrate Marsigli's ideas about communication routes, postal services, plague prevention, and the distribution of flora, fauna, and other natural formations, an understanding of which could promote improved relations and commerce between all the parties to the treaty (Gherardi 1986, 26–30; and see fig. 777).

The Treaty of Karlowitz was the first international diplomatic agreement followed by the demarcation and mapping of a borderline that legally, physically, and cartographically separated the territories of the Habsburg



FIG. 426. JOHANN CHRISTOPH MÜLLER, "SECTIO XXIV PARS CONFINIUM CISDANUBIALIUM ULTIMA NIMIRUM USQUE AD TRIPLEX CONFIN: IN CROATIA." Manuscript, pen and ink drawing, colored, scale ca. 1:37,500, oriented south. Part of the border map series representing the Karlowitz border in thirty-nine sections, prepared for Luigi Ferdinando Marsigli in 1703. The Habsburg-Ottoman-

Venetian triple border, located to the northwest of the fortress of Knin, was marked on top of the hill Veliko Berdo (today the peak Medveda Glavica of Debelo Brdo, Serbia), by a stone marker.

Size of the original: 49 × 62 cm. Image courtesy of the Kartensammlung, Österreichische Nationalbibliothek, Vienna (Cod. Min. 85, fol. 27r).

and Ottoman powers and also transformed the socio-cultural conditions in the Balkans.

ZSOLT G. TÖRÖK

SEE ALSO: Boundary Surveying: (1) Austrian Monarchy, (2) Ottoman Empire; Marsigli, Luigi Ferdinando; Müller, Johann Christoph

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Kipriyanov, Vasily Onufriyevich. Russian artist, map engraver, and publisher Vasily Onufriyevich Kipriyanov was born (date unknown) to a family from Ka-

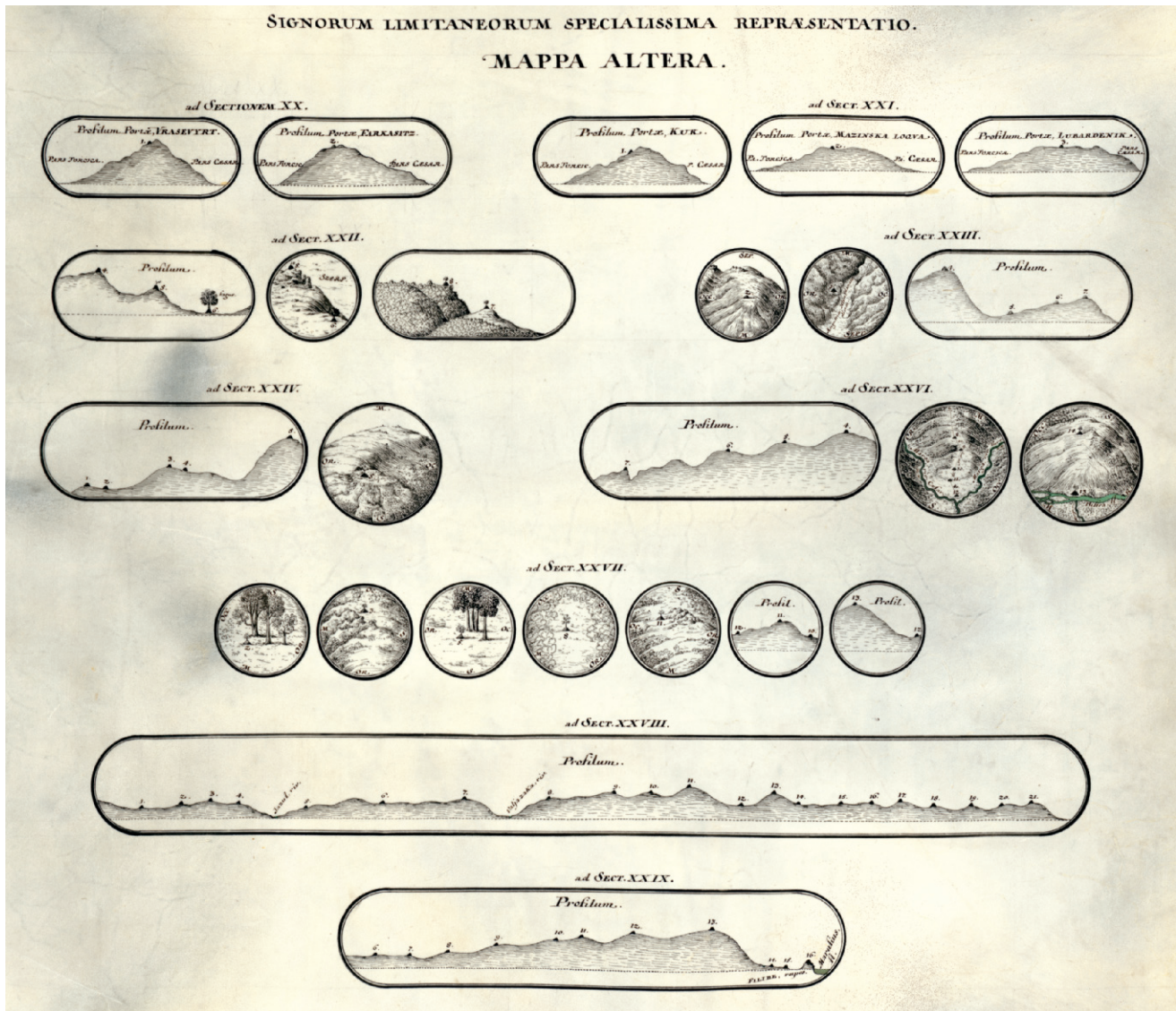


FIG. 427. JOHANN CHRISTOPH MÜLLER, “SIGNORUM LIMITANEORUM SPECIALISSIMA REPRESENTATIO: MAPPA ALTERA,” 1703. Müller created a key on two sheets to the individual section maps that made up the great border map. The images in the ovals depict specific boundary markers (trees, ditches, cairns) or particular sections of terrain that were identified along the boundary route. The details pertain-

ing to section XXIV (center left) show the ridge along which ran the red and yellow boundary located to the northwest of Knin (compare fig. 426). See previous entry, p. 710.

Size of the original: 50.5 × 58.5 cm. Image courtesy of the Kartensammlung, Österreichische Nationalbibliothek, Vienna (Cod. Min. 85, fol. 3r).

dasheëskaya sloboda in Moscow. Largely a self-taught artist and printer, he began publishing Russian maps in 1698, and by the early 1700s his printing shop in Moscow had become the primary map publishing establishment in Russia.

In 1701, Peter I organized the first systematic training for Russian surveyors at the Moscow school of mathematics and navigation, Moskovskaya matematiko-navigatskaya shkola. In the same year, Kipriyanov became the school’s

librarian and an assistant instructor in mathematics. When Peter I established the civilian publishing house Grazhdanskaya tipografiya in Moscow in 1705, he appointed Kipriyanov the administrator charged with publishing maps and leaflets under the general supervision of Yakov Vili-movich Bryus (Goldenberg and Postnikov 1990, 21–25). The publishing house’s primary products were maps and engravings, which included the first Russian atlas of the world, *Atlas mira*, in 1713 (Kokkonen 1992, 6). It was not

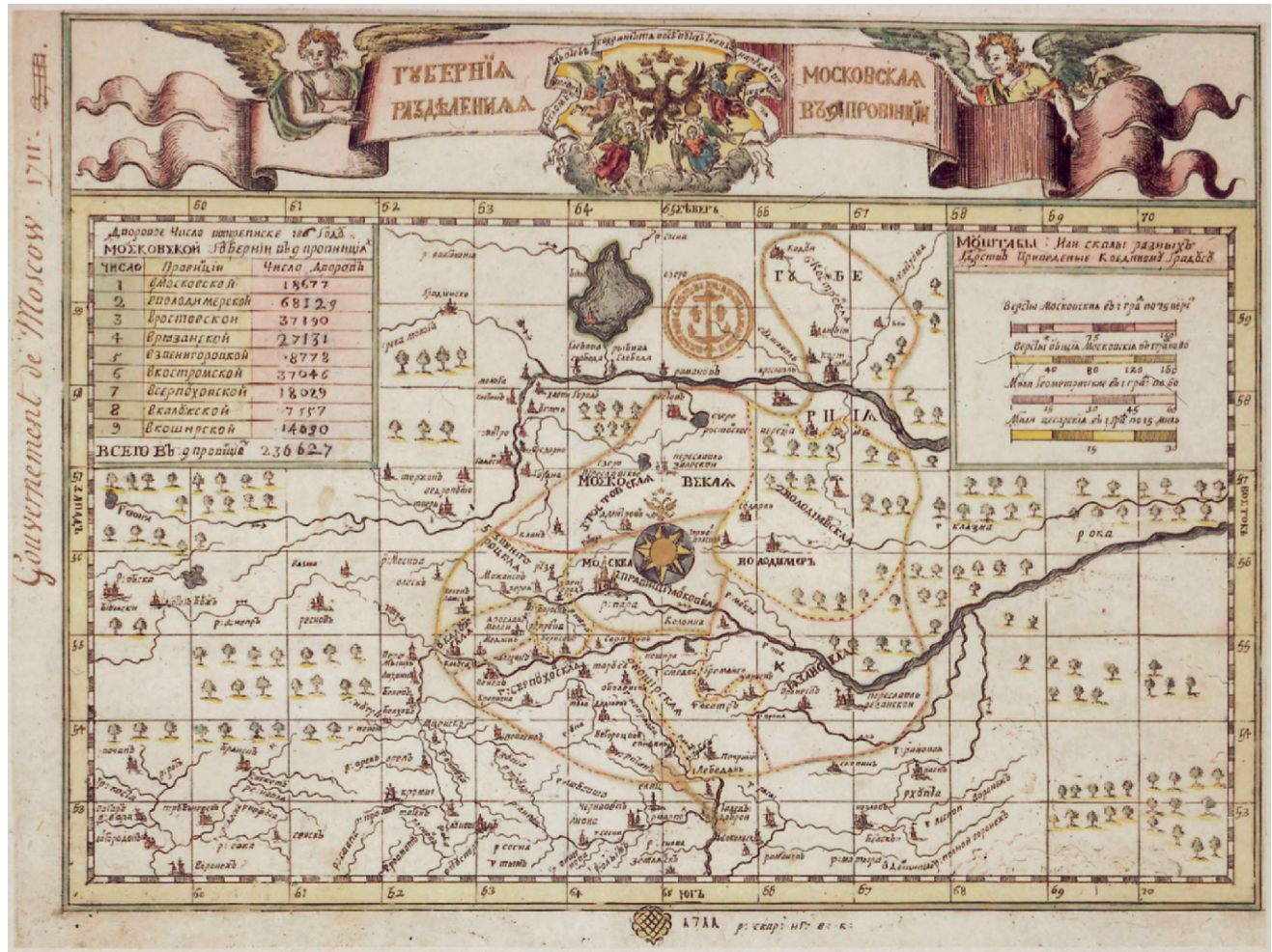


FIG. 428. VASILII ONUFRIYEVICH KIPRIYANOV'S MAP OF THE AREA AROUND MOSCOW, GUBERNIYA MOSKOVSKAYA, 1711. Kipriyanov's official seal can be seen in the map's lower margin.

Size of the original: ca. 24.5 × 33.0 cm. © Service historique de la Défense, Vincennes (MV 71, Recueil 54).

just a publishing house, but also Russia's first cartographic research and mapmaking establishment.

In 1715 Peter I organized a second civilian publishing house in Moscow, directing that Kipriyanov be its manager and librarian. With these expanded obligations, Kipriyanov left the Moscow school and devoted himself entirely to engraving, mapmaking, and publishing (Goldenberg and Postnikov 1990, 21–25). He published a variety of maps and atlases, mostly translated and copied from foreign originals, including thirteen maps from Dutch originals. Among the few locally sourced maps he published was a map of the Moscow region, produced earlier in 1711 (fig. 428), compiled by Kipriyanov himself, and based on German maps in the absence of Russian surveys (Kokkonen 1992, 6–7).

Kipriyanov had Peter I's implicit trust. He not only

traded in books and maps of his own production, but he eventually controlled all printed output in Moscow: no books, engravings, or maps could be sold without Kipriyanov's heraldic stamp (as seen in fig. 428). Kipriyanov's store was located near the Kremlin close to the Spasskiy Monastery.

Besides compiling and printing maps, Kipriyanov also authored text books and manuals on geodesy and cartography such as *Novyy sposob arifmetiki, feoriki ili zritelnyya* (1705) on new methods of arithmetic; *Tablitsy sinusov, tangensov* (1703 and 1716) on sines and tangents; *Sotnya astronomicheskaya* (1707) on astronomy; *Izobrazhenie svyatye zemli obetovannyye* (1716) on the Holy Land; *Tablitsa raznosti shiriny i otshestviya ot meridiana* (1720) on latitudes and longitudes; *Tablitsy gorizont'nye i yuzhnye shiroti* (1722) on "hori-

zontal and southern latitudes”; and *Tablitsy skloneniya solntsa* (1723) on the sun’s declinations. Kipriyanov’s best-known work was *Kniga imenuemaya Kalendar’* (1709), a one-hundred-year calendar that at the time was known as *Bryusov kalendar’*, after its presumed author, Bryus. Kipriyanov died in Moscow in 1723.

ALEXEY V. POSTNIKOV

SEE ALSO: Geographical Mapping: Russia; Map Trade: Russia

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Kirilov, Ivan Kirilovich. Born in 1689, possibly in Moscow, the son of a civil servant, Ivan Kirilovich Kirilov entered the Moskovskaya matematiko-navigatskaya shkola in 1702 and graduated in 1707. He began serving in the Admiralteystv kollegiya, spending his summers at sea and his winters in London and Amsterdam receiving education in nautical sciences. Upon returning to Russia, he was transferred to the land survey department of the civil service, where he was appointed a clerk at Yelets. In 1712, *stol’nik* (courtier with rank below boyar) Ivan Dmitriyevich Khlopov was sent from Moscow to look for promising youths, and passing through Yelets he found Kirilov, took him to Moscow, and secured a place for him in the head office of the estates department, *Pomestnyy prikaz* (Bagrow 1937).

Kirilov’s most important work came after being transferred to the senate chancellery, *Kantselyariya senatskogo pravleniya*, where he was noted as an “expert in land-surveying” (Bagrow 1937, 78). He remained in the senate for over two decades, rising in 1726 to become *ober-sekretar’*, where he oversaw the state surveys and data collection from all Russian regions begun under Peter I. In 1727, Kirilov used these reports to compile two manuscript volumes of economic, geographic, and demographic information for governmental use titled “*Tsvetushcheye sostoyaniye vserossiyskogo gosudarstva*” (Kirilov 1977). This work offered the most comprehensive description of the Russian Empire to date but was not published until 1831.

In the senate, Kirilov helped compile the earliest Russian manuals and instructions for surveyors and cartographers. One such manual, “*Instruktsiya dlya geodezistov*,” written in 1723 by Kirilov and the surveyor Akim Fedorovich Kleshnin, required that cities, villages, and mills be shown on maps by means of standard symbols, providing an early example of the desire for uniformity in Russian map design. In 1732, Kirilov established

twelve standard and universally mandatory signs for surveyors who had been dispatched to conduct surveys in Ukraine (Goldenberg and Postnikov 1985).

In addition to surveying, Kirilov instructed surveyors to keep a log of the smallest particulars, such as people’s religion, diet, and crops. In 1726 he began a grand summary of the data—an atlas and general map of the Russian Empire. The *Atlas vserossiyskoy imperii* was originally intended to comprise three volumes of 120 printed maps each. However, only thirty-seven maps were published and twenty-eight have survived. Kirilov published them in three sets in 1731, 1732, and 1734—including the first general map of the Russian empire (see fig. 737)—but the grand atlas was never completed. Four copies of these so-called Kirilov atlases have survived in Russia in the *Biblioteka rossiyskoy akademii nauk* (St. Petersburg), *Rossiyskaya natsional’naya biblioteka* (St. Petersburg), the library of *Moskovskiy gosudarstvennyy universitet geodezii i kartografii*, and in the library of *Irkutskiy gosudarstvennyy universitet*; there are also eleven separate sheets in France at the *Service historique de la Marine*, Vincennes. The Kirilov atlas was the first printed atlas of Russia and was a stimulus to the *Akademiya nauk* and the senate to improve the organization of cartographic activities.

Because so little Russian territory had been mapped with astronomical coordinates, using the survey materials to produce large- and small-scale maps was extremely complicated. Kirilov sought geometric control by using rivers and roads as the reference network on which to map other cartographic features. Provincial and city boundaries, followed by natural features such as fields, forests, lakes, and mountains, were all marked later. The resulting atlases seamlessly meshed general and local maps, providing a method for later mapmakers to follow (fig. 429). Kirilov’s sequence of map production for poorly explored regions has been followed by Russian cartographers up to the introduction of aerial and satellite mapping in the twentieth century.

As an *ober-sekretar’*, Kirilov oversaw several exploring and mapping expeditions. The most important, the Orenburg Expedition (1734–44), proposed by Kirilov, became a far-reaching enterprise and promoted Russian interests in Central Asia. Empress Anna Ivanovna approved the project in 1734 and installed Kirilov as its leader. In August 1735, the expedition arrived at the mouth of Orsk River, near the town of Orenburg (now Orsk), after a long and difficult journey. There Kirilov organized large-scale surveys and mapping, carried out amidst Bashkir uprisings against Russian encroachment. These demanding activities took a toll on Kirilov’s health, and he died in Samara in 1737 of tuberculosis.

ALEXEY V. POSTNIKOV

SEE ALSO: Administrative Cartography: Russia; Geographical Mapping: Russia; Russia

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(facing page)

FIG. 429. *SIU NOVUYU IDOSTOVERNUYU VSEI INGERMANLANDII LANT KARTU OBDERZHASHCHUYU VSEBE GORODY KREPOSTI SLOBODY* (ST. PETERSBURG, 1727). Engraved by Aleksey Ivanovich Rostovtsev, ca. 1:400,000. This map of Ingermanland (St. Petersburg Governorate) shows towns and fortresses, suburbs, factories, estates, villages, mills, rivers, lakes, canals, and major roads. Prepared

by four land surveyors and supplemented by Swedish sources, it was included in Kirilov's *Atlas vserossiyskoy imperii*, first issued in St. Petersburg in 1731.

Size of the original: 44 × 55 cm. Image courtesy of the Rossiyskaya gosudarstvennaya biblioteka, Moscow (Cartographical Department, Code No. Ko 106/III-1).