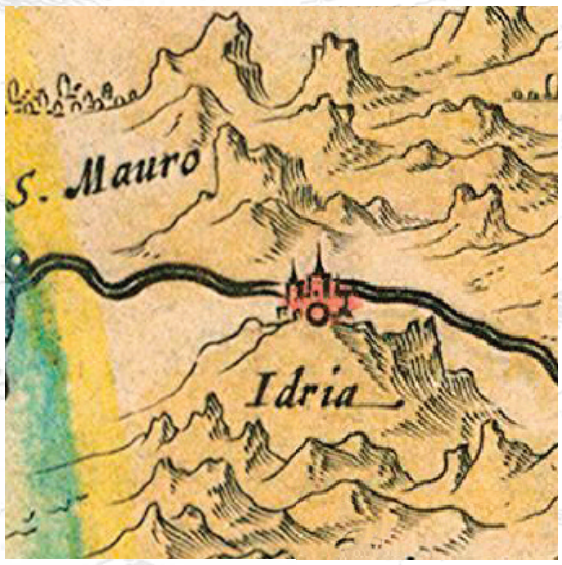

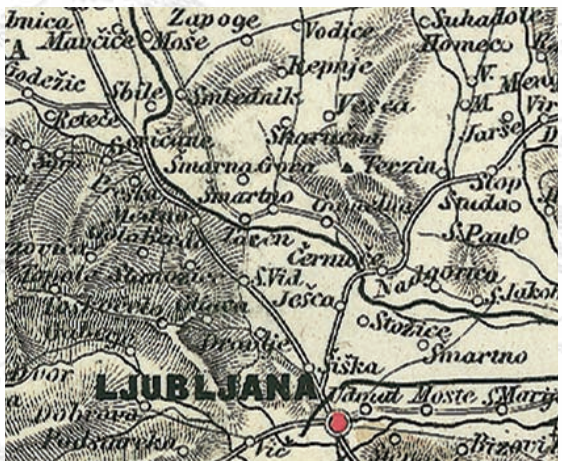

Kartografski zakladi slovenskega ozemlja

Cartographic treasures of Slovenian territory

Primož Gašperič, Renata Šolar, Matija Zorn

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Primož Gašperič was born in 1976 in Ljubljana. After high school he enrolled in the history and geography departments at the University of Ljubljana's Faculty of Arts in 1994, and he received his bachelor's degree there in 2002. In 2016, he earned a PhD at the University of Primorska's Faculty of Humanities. In 2003, he started working at the Anton Melik Geographical Institute of the Research Centre of the Slovenian Academy of Sciences and Arts, where he is head of the Geographical Museum. He is in charge of the collection of old maps, atlases, and archives of individual institute departments. His research focuses on historical cartography. Since 2004, he has been the manager and a member of the editorial board of the journal *Geografski obzornik* (Geographic Horizon). Gašperič takes part in many international and Slovenian projects run by the institute and heads specialized programs for groups and individuals at the museum.

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Renata Šolar was born in 1963 in Belgrade. She received her bachelor's degree from the University of Zagreb's Faculty of Science in 1987, earned her master's degree at the University of Ljubljana's Faculty of Arts in 1996, and received her PhD at the University of Zagreb's Faculty of Arts in 2006. She has worked at the Ljubljana National and University Library since 1996. From 1996 to 2020, she headed the library's Map and Pictorial Collection, and from 2007 to 2018 she also served as head of the Special Collections Division. Her research focuses on the application of new IT services for accessing maps in a library environment. She has taken part in several international and Slovenian research projects and has authored many research articles dealing with information science and librarianship. She also chaired and co-founded several international associations of map curators at cultural heritage institutions (the LIBER Maps Expert Group and the Map & Geoinformation Curators Group, or MAGIC).

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Kartografski zakladi slovenskega ozemlja

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ZALOŽBA ZRC

LJUBLJANA 2020

KARTOGRAFSKI ZAKLADI SLOVENSKEGA OZEMLJA
CARTOGRAPHIC TREASURES OF SLOVENIAN TERRITORY

Primož Gašperič, Renata Šolar, Matija Zorn

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1 Uvod

Osnovnemu kartografskemu prikazu pravimo zemljevid (beseda slovenskega izvora) ali karta (grško *khártēs* – papirusov list, zvitek, latinsko *charta* – papir, spis). **Zemljevid** je »*dvorazsežnostni prikaz Zemljinega površja in različnih pojavov*« (Perko 2001, 31) oziroma »*v določenem merilu pomanjšana in posplošena ponazoritev Zemljinega površja ali njegovih posameznih delov*« (Kladnik 2001, 630), »*pomanjšan in z dogovorjenimi znaki upodobljen prikaz Zemljinega površja*« (Krušič 1982, 267), »*navadno papir, platno z upodobitvijo Zemljinega površja, objektov na njem v pomanjšanem merilu … z geografskimi podatki o pojavih, stanjih in procesih*« (Kladnik, Lovrenčak in Orožen Adamič 2005, 439).

Kartografija je »*umetnost, znanost in tehnologija izdelovanja ter uporabe zemljevidov*« (ICA 2003, 17) oziroma »*veda in tehnična stroka o sestavi zemljevidov*« (Krušič 1982, 90), »*nauk o grafičnem upodabljanju Zemljinega površja*« (Kladnik 2001, 189) ali kratko »*veda o izdelavi zemljevidov*« (Kladnik, Lovrenčak in Orožen Adamič 2005, 166).

Ko poskušamo zajeti preteklo obdobje kartografskega razvoja, govorimo o **zgodovini kartografije**. Pri tem preučujemo, kako so ljudje v različnih kulturah ter v različnih obdobjih izdelovali in uporabljali zemljevide.

Sodobna kartografija se drži dogovorjenih standardov. Zemljevid ni le slika oziroma pomanjšana podoba nekega ozemlja, temveč je slika v določenem razmerju pomanjšanega površja, najpogosteje gledanega iz navpične točke, prenesenega na ravno ploskev s pomočjo matematično zasnovane projekcije, za boljše razumevanje pojavov pa je opremljena z dogovorjenimi znaki in napisi (Vrišer 1992). Pri starejših zemljevidih standardi izdelave niso bili predpisani, zato so avtorji prosto izbirali vrsto in način prikaza podatkov. Razlike so najbolj opazne pri prikazih površja, točnosti ter nekartografskih vsebinah na oziroma ob zemljevidu.

Slovensko ozemlje je bilo v preteklih stoletjih večkrat kartografsko upodobljeno. Ti kartografski prikazi (zemljevidi) danes predstavljajo nekakšne »časovne kapsule« za razumevanje zgodovine, geografije, politične realnosti in tudi umetnosti. Zemljevidi prikazujejo stopnjo poznavanja okolja, nudijo vpogled v takratno kulturo (Klemenčič 2002) ter so pomemben vir za razumevanje in poznavanja preteklih pokrajin (Polič 2002). So ogledalo kartografskega razvoja ter družbenih in političnih razmer časa, v katerem so nastali. Njihova sporočilna »moč« je v posredovanju dojemanja in predstav o pokrajini (Fridl in Šolar 2011). Danes so sestavni del kulturne dediščine.

1 Introduction

A basic cartographic depiction is referred to as *map* or *chart* (from Latin *charta* 'paper, writing' from Greek *khártēs* 'papyrus, scroll'). A **map** is »a two-dimensional depiction of the Earth's surface and various phenomena« (Perko 2001, 31) or »a generalized illustration of the Earth's surface or its individual parts reduced to a specific scale« (Kladnik 2001, 630), »a reduced depiction of the Earth's surface using conventional signs or symbols« (Krušič 1982, 267), »usually a sheet of paper or canvas depicting the Earth's surface and its features at a reduced scale … containing geographical data on phenomena, states, and processes (Kladnik, Lovrenčak, and Orožen Adamič 2005, 439).

Cartography is »the art, science, and technology of making and using maps« (ICA 2003, 17) or »the discipline and technical field of designing maps« (Krušič 1982, 90), »the science of graphically representing the Earth's surface« (Kladnik 2001, 189), or, in short, »the science of making maps« (Kladnik, Lovrenčak, and Orožen Adamič 2005, 166).

When attempts are made to capture a past period of cartographic development, this is referred to as the **history of cartography**. It involves the exploration of how people produced and used maps in different cultures and periods.

Modern cartography is based on agreed-upon standards. A map is not only an image or a reduced depiction of a territory, but an image of the surface reduced to a specific scale, typically viewed from a vertical point and projected onto a plane using mathematical projection, and outfitted with conventional signs and symbols to aid understanding (Vrišer 1992). There were no design standards in place for older maps, and so their authors were free to select the type and manner of representing data. Differences are most evident in depictions of the terrain, accuracy, and non-cartographic elements on or alongside the map.

Over the past centuries, Slovenian territory has been depicted on several maps. These maps now represent a sort of »time capsule« that help in understanding history, geography, political conditions, and art. Maps demonstrate the level of familiarity with the environment, provide insight into the culture of a specific period (Klemenčič 2002), and are important sources for understanding and learning about past landscapes (Polič 2002). They reflect the cartographic development and the social and political situation of the period in which they were created. Their communicative power lies in revealing how a landscape was perceived and viewed at a specific point in time (Fridl and Šolar 2011). Today maps form part of cultural heritage.

Uvod

Prek zemljevidov lahko spremljamo, kako so se spreminjale kartografske tehnike, njihov videz ter prikaz pokrajine. Zato so edinstven vir za razumevanje tehnološkega razvoja ter miselnosti nekega časovnega obdobja.

Kljub bogastvu kartografskih upodobitev ter možnostim, ki jih te ponujajo za razumevanje preteklih obdobij, jim slovenska zgodovina, umetnostna zgodovina, geografija in kartografija niso posvetile dovolj pozornosti. O starih kartografskih prikazih tako ni napisanih veliko del. Najobsežnejše delo je monografija *Naš prostor v času in projekciji* (Korošec 1978). Več je krajših razprav, kot sta *Slovenske dežele na zemljevidih od 16. do 18. stoletja* (Bohinec 1969) in *Slovenci v svetu: slikovite predstavitve slovenskih dežel in sveta na starih zemljevidih* (Slovenci … 1986). Med poglavji v monografijah omenimo *Slovenija na starejših zemljevidih* (Mihevc 1998) in *Oris razvoja kartografije in geografije* (Fridl 1998) v Geografskem atlasu Slovenije, *Razvoj slovenske kartografije in geografije* v Nacionalnem atlasu Slovenije (Fridl in Mihevc 2001) in *Prikazi slovenskega ozemlja* v Ilustrirani zgodovini Slovencev (Longyka 1999) ter krajši poglavji v monografiji *Razvoj geografije na slovenskem* (Ogrin 2019a). Med preglednimi članki o zgodovini kartografije omenimo še *Nekoliko o zemljevidih slovenskih pokrajin v prejšnjem in sedanjem času* (Orožen 1901), *Kartografske upodobitve Slovenije skozi čas* (Gašperič 2007) ter *Stari zemljevidi ozemlja Slovenije* (Gašperič 2018).

Zapostavljen je bil tudi potencial kartografske dediščine kot zgodovinskega vira (Jenny, Jenny in Hurni 2009), čeprav so zemljevidi prvovrsten vir za prostorsko razumevanje pokrajine v nekem časovnem obdobju oziroma za spremljanje prostorske dinamike skozi daljša obdobja. To je bilo drugotnega pomena, saj smo tudi v zgodovinski literaturi lahko brali, da je njihova funkcija predvsem v podajanju rezultatov (Grafenauer 1960). Toda kartografski viri niso zgolj sredstvo za prostorski prikaz pojavov, temveč so verodostojen dokument prostora, časa in družbenih razmer, v katerih so nastali (Slukan Altić 2003), ter jih kot take lahko obravnavamo kot vire prve roke, pri katerih »*je mogoče ugotoviti neposreden stik avtorja vira z dogodki ali stanji*« (Grafenauer 1960, 252). Pogosto vsebujejo informacije, ki niso zabeležene v nobenem drugem viru (na primer zemljepisna imena, potek meja, prometnic, vodotokov, oblik površja) (Rumsey in Williams 2002). Danes se v Slovenji kot vir uporabljajo predvsem pri zgodovinski geografiji in okoljski zgodovini, pretežno v povezavi s spremembami rabe tal in kulturne pokrajine. Njihovo uporabo za kvantitativno preučevanje pokrajinskih sprememb so pospešili geografski informacijski sistemi (GIS-i), ki so jih »*osvobodili statičnosti*« oziroma le odtisa na papirju (Zorn, Breg Valjavec in Ciglič 2018).

Kot pri vseh zgodovinskih virih je tudi pri kartografskih potrebna kritična obravnava. V povezavi s tem je treba poznati zgodovinski kontekst, v katerem so nastali, saj so zrcalo potreb naročnikov, kar je vplivalo na vsebino. Pomembno je, ali je kartografsko gradivo nastalo kot plod terenskega dela

Maps show how cartographic techniques, maps' design, and landscape representations have changed over time. Therefore, they are a unique source for understanding the technological development and mindset of a specific period.

Despite the wealth of maps and the opportunities they offer for understanding past periods, Slovenian history, art history, geography, and cartography have not paid them sufficient attention. Hence, not much has been written about old maps. The most extensive work so far is the volume *Naš prostor v času in projekciji* (Our Space in Time and Projection; Korošec 1978). There have been several short tretise published on this topic, such as *Slovenske dežele na zemljevidih od 16. do 18. stoletja* (The Slovenian Lands on Sixteenth- to Eighteenth-Century Maps; Bohinec 1969) and *Slovenci v svetu: slikovite predstavitve slovenskih dežel in sveta na starih zemljevidih* (Slovenians around the World: Picturesque Representations of the Slovenian Lands and the World on Old Maps; Slovenci … 1986). Chapters in books discussing this topic include »Slovenija na starejših zemljevidih« (Slovenia on Old Maps; Mihevc 1998) and »Oris razvoja kartografije in geografije« (Outline of the Development of Cartography and Geography; Fridl 1998) in *Geografski atlas Slovenije* (Geographical Atlas of Slovenia), »Razvoj slovenske kartografije in geografije« (Development of Slovenian Cartography and Geography) in *Nacionalni atlas Slovenije* (National Atlas of Slovenia; Fridl and Mihevc 2001), »Prikazi slovenskega ozemlja« (Depictions of Slovenian Territory) in *Ilustrirana zgodovina Slovencev* (Illustrated History of the Slovenians; Longyka 1999), and two short chapters in *Razvoj geografije na slovenskem* (The Development of Geography in Slovenia; Ogrin 2019a). Review articles examining the history of cartography include »Nekoliko o zemljevidih slovenskih pokrajin v prejšnjem in sedanjem času« (Maps of Slovenian Regions in the Past and Present; Orožen 1901), »Kartografske upodobitve Slovenije skozi čas« (Cartographic Images of Slovenia through Time; Gašperič 2007), and »Stari zemljevidi ozemlja Slovenije« (Old Maps of Slovenian Territory; Gašperič 2018).

The potential of cartographic heritage as a historical source has also been neglected (Jenny, Jenny, and Hurni 2009), even though maps are a prime source for the spatial understanding of a landscape in a specific period or examining spatial dynamics over longer periods. This has been of secondary importance because even historical literature claimed their function was primarily to present results (Grafenauer 1960). However, cartographic sources are not only a means of spatial representation of phenomena, but also a credible document of the place, time, and social conditions in which they were created (Slukan Altić 2003). Thus, they can be considered first-hand sources that »make it possible to determine the cartographer's direct contact with events or conditions« (Grafenauer 1960, 252). Maps often contain information that has not been recorded in any other source (e.g., geographical names and the location of borders, roads,

kartografa (in je kot tako vir prve roke) ali so bile za izdelavo uporabljene že obstoječe kartografske podlage (in je kot tako vir druge roke), kar lahko botruje zastarelim, lahko tudi napačnim podatkom. Ne nazadnje sta pomembna tudi avtorstvo, saj so kartografi pripadali različnim »šolam«, ter tehnološki razvoj kartografskih tehnik, kar se odseva v njihovi natančnosti. Zavedati se moramo tudi, da ima lahko kartografski vir načrtne napake, ki se pojavljajo na primer na vojaških ali tematskih zemljevidih (Monmonier 1996), ali napake, povezane z nepoznavanjem pokrajine (Rumsey in Williams 2002; Jenny, Jenny in Hurni 2009; Zorn, Breg Valjavec in Ciglič 2018; Zorn, Ciglič in Gašperič 2020) oziroma pretirano domišljijo kartografa, ki je zapolnil prazen prostor, na primer s podobami mitoloških bitij (Ekman 2013; Gašperič in Komac 2020).

V besedilnem delu knjige na kratko predstavljamo zgodovino evropske kartografije do konca 19. stoletja, kartografske prikaze slovenskega ozemlja do začetka 20. stoletja ter zemljevide kot kulturno dediščino. Kartografski del monografije pa prinaša kronološki prikaz pomembnejših starih zemljevidov slovenskega ozemlja. Predstavljeni so zemljevidi od srede 16. stoletja, ko so nastala prva samostojna kartografska dela današnjega slovenskega ozemlja, do začetka 20. stoletja, ko se kartografija razvije v sodobno vedo. Na koncu je dodan seznam zemljevidov slovenskega ozemlja v obravnavanem obdobju.

Namen knjige ni obsežna predstavitev posameznih zemljevidov, temveč predstavitev slovenske kartografske dediščine. Podrobneje je opisanih zgolj nekaj zemljevidov, ki v kartografskem, zgodovinskem in nacionalnem pogledu veljajo za najpomembnejše.

Knjiga je dvojezična, v slovenskem in angleškem jeziku, saj je bila kartografija na Slovenskem del širše srednjeevropske kartografije in je kot taka lahko zanimiva za širšo regijo.

MARKO ZAPLATIL, Zemljepisni muzej GIAM ZRC SAZU
MARKO ZAPLATIL, GIAM ZRC SAZU Geographical Museum

Slika 1: Kartografsko gradivo je bilo mnogokrat priloženo knjižnim delom.
Figure 1: Maps were often appended to books.

watercourses, and landforms; Rumsey and Williams 2002). In Slovenia they are now primarily being used as a source in historical geography and environmental history, largely in connection with changes in land use and the cultural landscape. Their application in the quantitative study of landscape change has been facilitated by geographic information systems (GIS), which »freed them of their static nature« or of being merely printing on paper (Zorn, Breg Valjavec, and Ciglič 2018).

As with all historical sources, cartographic sources also require a critical approach. In this regard, it is important to know the historical context in which they were created because they mirror the needs of those that commissioned them, which affected their content. It is vital whether the map was the result of the cartographer's fieldwork (and can thus be considered a first-hand source) or existing cartographic sources were used to produce the map (which is hence considered a second-hand source), which may be the reason for outdated or even false information. Ultimately, also important are the authorship, because cartographers belonged to different »schools,« and the technological development of cartographic techniques, which is reflected in the maps' accuracy. It is also vital to note that a cartographic source may contain deliberate mistakes, which can be found, for instance, on military or thematic maps (Monmonier 1996), or mistakes connected with the cartographer's poor familiarity with the region (Rumsey and Williams 2002; Jenny, Jenny, and Hurni 2009; Zorn, Breg Valjavec, and Ciglič 2018; Zorn, Ciglič, and Gašperič 2020) or his excessive imagination, whereby empty spaces were filled with depictions of imaginary creatures and the like (Ekman 2013; Gašperič and Komac 2020).

The text of this book briefly presents the history of European cartography until the end of the nineteenth century, maps of Slovenian territory until the early twentieth century, and maps as cultural heritage. In turn, its cartographic section features important old maps of Slovenian territory presented in chronological order. The maps displayed originate from the mid-sixteenth century, when the first independent maps of what is now Slovenia were created, to the early twentieth century, when cartography evolved into a modern discipline. The book concludes with a list of maps of Slovenian territory from the period studied.

The aim of this book is not to provide an extensive presentation of individual maps, but to present Slovenian cartographic heritage. Only a few maps that are considered the most important from the cartographic, historical, and Slovenian perspective are described in greater detail.

The book is bilingual (i.e., Slovenian and English) because Slovenian cartography was part of wider central European cartography and as such is of interest to the wider region.

2 Razvoj evropske kartografije

2.1 Prazgodovina in antika

Na podlagi arheoloških najdb lahko trdimo, da segajo kartografski začetki v prazgodovino. V prazgodovini je bilo risanje »zemljevidov« vrsta umetniškega izražanja posameznikov ali skupin, ki ni imelo veliko skupnega s poznejšim kartografskim delom. Takratni »zemljevidi« so bile preproste slike nekega objekta ali dela naravnega okolja. Za upodobitve so bili uporabljeni različni naravni materiali, kot so les, kosti, glina, kamen oziroma stene jam. Večina se jih zaradi podnebnih razmer ter neobstojnosti materiala in barv ni ohranila (Gašperič 2007).

V obdobju do antike ne moremo govoriti o pravih zemljevidih. Gre za njihove predhodnike. Preproste oblike prikazov površja naj bi se pojavile pred 30.000 leti, ko se je pračlovek že znal izražati s simboli (Robinson s sodelavci 1995; Podobnikar 2002). Med najstarejše »zemljevide« uvrščamo upodobitvi na mamutovem oklu z Moravske na Češkem, ki naj bi bila stara okoli 25.000 let (Svoboda 2007) ter iz okolice Kijeva v Ukrajini iz 12. tisočletja pred Kristusom (James in Thorpe 1995; Perko 2005). Iz istega obdobja so tudi upodobitve v jami v španski pokrajini Navarra (Utrilla s sodelavci 2009; Clarke 2013).

S predstavo o Zemlji oziroma poznanem svetu so se podrobno ukvarjali stari Grki, pri katerih prevladujeta predstavi o Zemlji kot okrogli plošči in pozneje kot krogli (Hoyle 1971; Aujac 1987; Ogrin 2017). Grki so dali temelje risanju zemljevidov in kartografiji kot vedi, saj so se mnogi učenjaki tistega časa ukvarjali z obliko Zemlje, njeno velikostjo in prikazom. Med njimi lahko omenimo **Klavdija Ptolemaja** (okoli 90–okoli 170). Kot prvi je zbral astronomska in kartografska spoznanja svojih predhodnikov ter dodal lastna dognanja. Objavil jih je v obsežnem delu matematičnih in astronomskih razprav o gibanju zvezd in planetov *Mathēmatikē Syntaxis* (Matematična sintaksa, grško *Μαθηματικὴ Σύνταξις*). Zanj se je v poznejših latinskih prevodih uveljavilo tudi ime *Almagestum* (Almagest), kar je latinizirana oblika arabskega imena الكتاب المجسطي (al-kitab al-madžisti), v pomenu Velika zbirka. Omenjeno delo predstavlja enega pomembnejših astronomskih znanstvenih besedil vseh časov. Pomembno je tudi njegovo delo s sorodno tematiko *Geographike Hyphegesis* (Geografski priročnik, grško *Γεωγραφικὴ Ὑφήγησις*), ki se v latinskem prevodu imenuje *Geographia* ali *Cosmographia* (Geografija ali Kozmografija). V njem so kraji na Zemlji prvič označeni z geografskimi širinami in dolžinami, ki pa po večini niso bile določene na podlagi opazovanj, temveč privzete iz starejših zemljevidov in potopisov (Ptolemaeus 1976; Fridl 1999). Ptolemaj je izdal zemljevid takrat znanega sveta, ki pa se v izvirniku ni ohranil. Se je pa po zaslugi Arabcev ohranilo nekaj njegovih drugih

2 Development of European Cartography

2.1 Prehistory and Antiquity

Archeological finds demonstrate that the beginnings of cartography extend back to prehistory. During that period, drawing »maps« was a type of artistic expression used by individual or groups, and had only little in common with later cartographic practice. The »maps« of that time were simple depictions of an object or part of the natural environment, for which various natural materials such as wood, bones, clay, stone, or cave walls were used. Due to the climate conditions and their non-durable materials and colors, most of them have not been preserved (Gašperič 2007).

Before Classical Antiquity, one cannot really speak of proper maps, but more of their predecessors. Simple depictions of the Earth's surface are believed to have emerged 30,000 years ago, when people were already able to express themselves in symbols (Robinson et al. 1995; Podobnikar 2002). The oldest »maps« include a depiction on a mammoth's tusk from Moravia (in today's Czech Republic), which is believed to be 25,000 years old (Svoboda 2007), and a depiction from the Kyiv area (in Ukraine) from the twelfth millennium BC (James and Thorpe 1995; Perko 2005). Depictions in a cave in the Spanish region of Navarra also date back to the same period (Utrilla et al. 2009; Clarke 2013).

The conception of the Earth or the known world was also dealt with in detail by the ancient Greeks, who predominantly conceived of the Earth as a flat disk and later as a sphere (Hoyle 1971; Aujac 1987; Ogrin 2017). The Greeks laid the foundations for drawing maps and cartography as a discipline because many scholars of that time focused on the Earth's shape, size, and representation. One of them was **Ptolemy** (c. AD 90 – c. AD 170), who was the first to collect the astronomical and cartographic findings of his predecessors, which he supplemented with his own insights. He published these in *Mathēmatikē Syntaxis* (Mathematical Treatise), an extensive volume of mathematical and astronomical treatises on the movement of stars and planets. Based on later Latin translations, the work also became known as the *Almagest* (Latin *Almagestum*), which is a Latinized form of Arabic *al-kitab al-majisṭī*, meaning 'great collection'. This work is one of the most influential astronomic scholarly texts of all times. Another important work by Ptolemy that discusses a similar topic is *Geographike Hyphegesis* (Geographical Guidance), translated into Latin as *Geographia* (Geography) or *Cosmographia* (Cosmography). It provides, for the first time ever, latitude and longitude coordinates for places on Earth – which, however, were largely not defined based on observation, but taken from

del ter dela ostalih starogrških avtorjev (Karamustafa 1992). Ptolemajev zemljevid sveta so v Evropi v najrazličnejših izvedbah in predelavah izdajali še v novem veku.

Evropska antična kartografija je s Ptolemajem dosegla vrh, nato pa je postopoma nazadovala. V času rimske države se je večina kartografskih del podredila praktičnim zahtevam trgovine, vojske in prometa. Ob vseh glavnih poteh so postavili miljnike, ki so pripomogli k razvoju cestnih zemljevidov in itinerarijev (Dilke 1985). Najbolj znan tovrsten zemljevid je prav gotovo *Tabula Peutingeriana* (Peutingerjev zemljevid). Original se ni ohranil, poznana pa je srednjeveška kopija iz prvih stoletij po Kristusu ter prikazuje ceste in poti z razdaljami med kraji v rimskih miljah (Mihevc 1998).

2.2 Srednji vek

Propad zahodne polovice Rimskega cesarstva v drugi polovici 5. stoletja ter preseljevanje ljudstev sta povzročila, da se je v srednjem veku mnogo znanja izgubilo oziroma se je dotedanjim spoznanjem in dosežkom celo nasprotovalo oziroma se jih je zavračalo. Od visokega srednjega veka se je krščanska Evropa, ob ponovnem odkrivanju antike ter ob stikih s sosednjimi kulturami (arabsko), začela kulturno obnavljati. Na dolgotrajno in mnogokrat težavno sprejemanje antičnih, arabskih in drugih spoznanj je močno vplivala krščanska cerkev, ki je postala sito med odkrivanjem drugih spoznanj in kultur ter krščanskimi nazori in dogmami.

Najbolj znana kartografska dela srednjega veka so zemljevidi sveta in portolanski zemljevidi. Srednjeveški zemljevidi sveta (latinsko *mappe mundi*), imenovani **T-O zemljevidi**, so zelo preprosti in prepoznavni po legi celin okoli »svetega« središča Jeruzalema. Praviloma so orientirani proti vzhodu (Gašperič 2007). Na njih je Svet razdeljen na tri dele. V zgornji polovici (zgornji del črke »T«) je Azija, v spodnji levi polovici Evropa, v spodnji desni pa Afrika (obe v spodnjem delu črke »T«). Mejo med Evropo in Afriko predstavlja Sredozemsko morje, mejo med Azijo in spodnjo polovico pa reki Don in Nil. Obe ločnici med celinami oblikujeta črko T, njuno stičišče pa sovpada z lego Svete dežele. Oblika zemljevida in morje, ki obdaja kopno, imata obliko črke O (Fridl 1999; Ogrin 2018).

V 12. stoletju se je v Evropi začel počasen, a vztrajen proces kartografskega preporoda oziroma kartografske renesanse (Woodward 1987), ki je temeljil na iznajdbi kompasa, odkrivanju neznanega sveta in Ptolemajevih delih. Začela se je izdelava tako imenovanih **portolanskih zemljevidov** (po italijanski besedi *porto* za pristanišče) oziroma pomorskih zemljevidov. Za čas nastanka so zelo natančni, saj najpogosteje zelo podrobno prikazujejo obalno črto, pristanišča in kompasne smeri plovbe po morju. Za orientacijo med plovbo so služili predvsem mornarjem in trgovcem (Campbell 1987).

older maps and itineraries (Ptolemaeus 1976; Fridl 1999). Ptolemy also published a map of the world known at the time, but its original has not been preserved. However, thanks to the Arabs, several of his other works and the works of other ancient Greek authors have been preserved (Karamustafa 1992). Ptolemy's world map continued to be reproduced in Europe in various forms and adaptations well into the modern period.

European cartography of Antiquity reached its peak with Ptolemy, after which it gradually declined. During the Roman Empire, most maps were subordinated to the practical demands of trade, military, and transport. Milestones were placed along all major roads, which fostered the development of road maps and *itineraria* (Dilke 1985). The best-known map of this type is *Tabula Peutingeriana* (The Peutinger Map). The original has not been preserved, but a medieval copy is known based on a map from the first centuries AD depicting roads and routes with distances between places expressed in Roman miles (Mihevc 1998).

2.2 The Middle Ages

The fall of the Western Roman Empire in the second half of the fifth century and the Migration Period resulted in a great deal of knowledge being lost in the Middle Ages, when previous findings and achievements were even opposed or rejected. From the High Middle Ages onward, Christian Europe – while rediscovering Antiquity and being in contact with neighboring cultures (e.g., Arabic) – began a cultural restoration. The long-lasting and often complex adoption of ancient, Arabic, and other insights was strongly influenced by the Christian church, which turned into a filter between discovering other insights and cultures on the one hand and Christian beliefs and dogmas on the other.

The best-known maps of the Middle Ages include world maps and portolan charts. Medieval world maps (Lat. *mappae mundi*), also called ***T-O maps***, are very simple, with the continents typically surrounding Jerusalem in the center. As a rule, they have east at the top (Gašperič 2007) and they divide the world into three parts. Asia is depicted on top (above the letter *T*), Europe lies in the bottom left half, and Africa in the bottom right half (both in the lower part of letter *T*). The border between Europe and Africa was the Mediterranean Sea, and the border between Asia and the bottom half was the Don and the Nile. Both borders form the letter *T*, with the Holy Land depicted at their intersection. The shape of the map and the ocean surrounding the mainland form the letter *O* (Fridl 1999; Ogrin 2018).

During the twelfth century, a slow but persistent process of cartographic revival or renaissance began in Europe (Woodward

2.3 Novi vek

Večji razmah je evropska kartografija dosegla v 15. stoletju v dobi odkritij (Ogrin 2019b; 2019c). Številna potovanja po kopnem, predvsem pa po morju, so znanilec sprememb pri spoznavanju prej »neznanega« sveta. Številne odprave so se vrnile z novimi meritvami, upodobitvami in spoznanji, zato je vzniknila nujnost po bolj kakovostnih kartografskih prikazih. Za dosego tega je bilo treba izboljšati tehniko izdelave zemljevidov. Z Gutenbergovim izumom tiska s premičnimi črkami je tudi tiskarska tehnika v 15. stoletju doživela preporod. Novi vek je tako postal zaznamovan s hitrim razvojem kartografske in tiskarske stroke (Gašperič 2007).

Kljub še neodkritim območjem je Martin Behaim (1459–1507) leta 1492 izdelal prvi še ohranjen **globus** poznanega sveta (Behaim 2004). Na njem ameriški celini še nista označeni.

Leta 1507, kmalu po odpravah Krištofa Kolumba (1451–1506), je nastal zemljevid sveta Nemca Martina Waldseemüllerja (okoli 1470–1520), ki prikazuje vzhodno obalo Severne in Južne Amerike, ločeni od Azije, pri čemer je Amerika prvič poimenovana kot *America* (Hébert 2003).

Na nadaljnji kartografski preporod v novem veku so vplivala tri pomembnejša »odkritja«. Prvo je bilo ponovno »odkritje« grške in rimske antične zapuščine. Tu izstopajo Ptolemajevi zemljevidi, predvsem po letu 1406 (Suarez 1999), ko so iz arabščine v latinščino prevedli njegovo delo Geografski priročnik. K napredku kartografije sta prispevala tudi graviranje in tiskanje zemljevidov ter odkritja novih delov sveta (Raisz 1948).

Ena najstarejših tehnik tiskanja je lesorezna tehnika, lesorez ali ksilografija. Najstarejši poznani zemljevid, narejen v tej tehniki, je zemljevid zahodne Kitajske iz leta 1155. Izdelali so ga na Kitajskem. V Evropi so bili prvi zemljevidi v tej tehniki T-O zemljevidi sveta, na primer zemljevid, natisnjen v Augsburgu leta 1472 in objavljen v delu *Etymologiae* (Etimologije) škofa Izidorja Seviljskega, ter zemljevida sveta in Palestine, natisnjena v Lübecku leta 1475 in objavljena v delu *Rudimentum Novitiorum* (Učbenik za začetnike) (Wallis in Robinson 1987; Baynton-Williams 2006; Durand in Curtis 2014). Ker se je ta tehnika uporablja tudi za tiskanje besedil, se je za zemljevide, izdane v knjigah (slika 1), uporabljala vse do druge polovice 19. stoletja. Pri tiskanju zemljevidov jo je v 16. stoletju v Evropi nadomestil bakrotisk (Wallis in Robinson 1987). Med najstarejše tovrstne kartografske izdelke uvrščamo bolonjsko izdajo Ptolemajeva Kozmografija iz leta 1477 (Wallis in Robinson 1987).

2.3.1 Šestnajsto stoletje

V prvi polovici 16. stoletja so imeli vodilno vlogo pri razvoju kartografije Italijani. Središči razvoja sta bili mesti Rim in

1987) inspired by the invention of the compass, discoveries of unknown parts of the world, and Ptolemy's works. This was when **portolan charts** (from Italian *porto* 'port') or nautical charts began to be produced. They are extremely accurate considering the time they were made, typically presenting the coastal line, ports, and the compass directions of navigation at sea in great detail. They were primarily used by seafarers and traders to find their bearings while sailing (Campbell 1987).

2.3 Modern Period

European cartography experienced a major boom in the fifteenth century during the Age of Discovery (Ogrin 2019b; 2019c). Numerous land and especially sea explorations heralded changes in the understanding of the previously »unknown« world. Many expeditions came back with new measurements, depictions, and insights, resulting in the necessity for higher-quality maps, which demanded improved cartographic techniques. Gutenberg's invention of the movable-type printing press also sparked the revival of printing in the fifteenth century. The modern period was thus characterized by a rapid development of cartography and printing (Gašperič 2007).

Despite the still-undiscovered parts of the world, Martin Behaim (1459–1507) produced the first **globe** of the known world in 1492 (Behaim 2004). It is now considered the oldest surviving world globe, on which the Americas are not yet depicted.

In 1507, soon after the voyages of Christopher Columbus (1451–1506), the German cartographer Martin Waldseemüller (c. 1470–1520) created a world map showing the eastern coast of North and South America, which are separated from Asia. This was the first map on which America was referred to as *America* (Hébert 2003).

Further cartographic revival during the modern period was influenced by three major discoveries. The first refers to the rediscovery of ancient Greek and Roman heritage. Ptolemy's maps stand out in this regard, especially after 1406 (Suarez 1999), when *Geographical Guidance* was translated from Arabic into Latin. The progress of cartography was also facilitated by map engraving and printing and discoveries of new parts of the world (Raisz 1948).

Woodcut, wood engraving, or xylography is one of the oldest printing techniques. The oldest known map produced with this technique is the 1155 map of western China made in China. The first maps using this technique in Europe were the T-O world maps, such as the one printed in Augsburg in 1472 and published in the encyclopedia *Etymologiae* (The Etymologies) compiled by Isidore of Seville, and the world

Benetke. Dela Giacoma Gastaldija (okoli 1500–1566) in nekoliko pozneje Vincenza Maria Coronellija (1650–1718) predstavljajo vrh italijanske renesančne kartografije. Proti koncu obdobja se je za v knjigo vezano zbirko zemljevidov začel uporabljati pojem **atlas**. Uveljavil se je po letu 1570, ko sta v knjižni obliki izšla atlasa Abrahama Orteliusa in Gerharda Mercatorja. Sredi 16. stoletja so izhajale podobne zbirke različno velikih in zato obrezanih zemljevidov. Gre za tako imenovane Lafrerijeve atlase, poimenovane po njihovem avtorju, vodilnemu italijanskemu založniku tistega časa, Antoniju Lafreriju (1512–1577) (Lafreri-School … 2006). Zelo kakovostna kartografska dela so izdelovali tudi Španci in Portugalci.

V drugi polovici 16. stoletja so pobudo na kartografskem področju prevzeli Nizozemci oziroma Belgijci. Flamca **Abraham Ortelius** (1527–1598) in **Gerhard Kremer Mercator** (1512–1594) ter pozneje Nizozemec **Willem Janszoon Blaeu** (1571–1638) so s svojimi zemljevidi in atlasi zaznamovali nadaljnji kartografski razvoj.

Mercatorja, čeprav izvira iz Flandrije, imajo za očeta nizozemske kartografije. Na podlagi lastnih preučevanj in potovanj je zmanjšal vpliv Ptolemajevih zemljevidov, zelo znana pa je tudi njegova valjna kartografska projekcija. Zaradi prezgodnje smrti je njegov atlas leta 1595 izdal sin Rumold. Na naslovnici je upodobljen Atlas, ki po eni razlagi predstavlja grškega mitološkega velikana Atlanta oziroma Atlasa (Atlas 1997; Perko 2002), po drugi pa mavretanskega kralja Atlasa, ki je bil filozof, matematik in astronom (The Earliest Atlases … 2020). Ime podobe je bil povod za poimenovanje atlasov.

Ortelius je od leta 1570 izdajal atlase z naslovom *Theatrum Orbis Terrarum* (Gledališče sveta), ki zaradi urejenosti in kakovosti zemljevidov predstavljajo prve moderne atlase sveta.

Angleška kartografija je dosegla pomembnejše kartografske premike v času kraljice Elizabete I. v drugi polovici 16. stoletja. Najpomembnejši kartograf te dobe je bil **Christopher Saxton** (okoli 1540–okoli 1610), ki je leta 1579 izdal *Atlas of the Counties of England & Wales* (Atlas grofij Anglije in Walesa) (Atlas … 2002).

V 16. stoletju so bili zelo dejavni tudi kartografi iz osrednje, predvsem nemško govoreče Evrope. Avstrijec **Wolfgang Lazius** (1514–1565) je delal na dvoru cesarja Ferdinanda I. Veliko je potoval in je avtor številnih zgodovinskih in kartografskih del (Kratochwill 1985). V tem obdobju so bile zelo razširjene tako imenovane **kozmografije**. Gre za dela, ki vsebujejo astronomska, geografska, zgodovinska, vremenska in ostala besedila, katerim so dodane slike in zemljevidi. Med bolj znanimi je *Cosmographia seu descriptio totius orbis* (Kozmografija ali opis celega sveta) Nemca Petra Apiana (tudi Peter Bienewitz, 1495–1552) iz leta 1524 (O'Connor in Robertson 2002) in *Cosmographia* (Kozmografija) Nemca **Sebastiana Münstra** (1488–1552) iz leta 1544, ki sta doživeli številne ponatise

map and the map of Palestine printed in Lübeck in 1475 and published in the book *Rudimentum Novitiorum* (Primer for Novices; Wallis and Robinson 1987; Baynton-Williams 2006; Durand and Curtis 2014). Because this technique was also used for printing texts, it continued to be applied to maps released in books (Figure 1) until the second half of the nineteenth century. In sixteenth-century Europe, it was replaced by copper engraving (Wallis and Robinson 1987). The oldest maps of this type can be found in the 1477 edition of Ptolemy's *Cosmographia*, printed in Bologna (Wallis and Robinson 1987).

2.3.1 Sixteenth Century

In the first half of the sixteenth century, Italians played the leading role in the development of cartography, with Rome and Venice as its centers. The works of Giacomo Gastaldi (c. 1500–1566) and the slightly later works of Vincenzo Maria Coronelli (1650–1718) were at the peak of Italian Renaissance cartography. Toward the end of the century, the term ***atlas*** began to be used for a collection of maps bound into a book. It became established after 1570, when the atlases by Abraham Ortelius and Gerardus Mercator were published in book form. Similar collections of maps of various sizes, which thus had to be cropped, were published in the mid-sixteenth century. These were the Lafreri atlases, named after their author, the leading Italian publisher at that time, Antonio Lafreri (1512–1577; Lafreri-School … 2006). High-quality maps were also produced by the Spanish and Portuguese.

In the second half of the sixteenth century, the leading role in cartography was taken over by the Dutch and Belgians. The maps and atlases produced by the Flemish cartographers **Abraham Ortelius** (1527–1598) and **Gerardus Mercator** (1512–1594), as well as the Dutch cartographer **Willem Janszoon Blaeu** (1571–1638) later on, marked the further development of cartography.

Even though originally from the County of Flanders, Mercator is considered the father of Dutch cartography. Based on his own studies and travels, he reduced the influence of Ptolemy's maps and, among other things, introduced his well-known cylindrical map projection. Due to his untimely death, his atlas was published posthumously by his son Rumold in 1595. Depicted on its frontispiece is Atlas, who, on the one hand, is believed to be a mythological Greek titan (Atlas 1997; Perko 2002) and on the other hand a king of Mauretania, known as a philosopher, mathematician, and astronomer (The Earliest Atlases … 2020). The term *atlas* comes from the name of this mythical figure.

From 1570 onward, Ortelius published his *Theatrum Orbis Terrarum* (Theater of the World) atlases, which are considered the first true atlases in the modern sense: a collection of uniform and logically arranged high-quality map sheets.

(Karrow 1993). Slednja je razsvetljenska priredba Ptolemajeve Geografije, ki je dobila ime Kozmografija po zaslugi humanista Jacopa d'Angela (deloval okoli 1400). D'Angelo je med letoma 1406 in 1410 prevajal Ptolemajeva dela iz grščine v latinščino (Cosgrove 2007; Codicum Facsimiles 2019).

2.3.2 Sedemnajsto stoletje

V 17. stoletju so v evropski kartografiji še naprej imeli vodilno vlogo Nizozemci. Kartografski prikazi so postali tržno zanimivi, zato je bila zelo pomembna tudi zunanja podoba zemljevida. Podatki za njihovo izdelavo so bili pogosto omejeni na kopiranje drugih zemljevidov. Kljub novim odkritjem so številne zemljevide tiskali, dokler njihova prodaja ni upadla. Želja po manjših stroških izdelave je vplivala na počasnejši razvoj kakovosti kartografskega prikaza (Raisz 1948). Amsterdam je bil kartografsko središče, kjer so zemljevide množično izdelovali, tiskali in prodajali. Mercatorjevo in Orteliusovo kartografsko izročilo so nadaljevale družine Hondius, Ottens in Blaeu (Longyka 1999). Flamska **družina Hondius** je po Mercatorjevi smrti podedovala tiskarske plošče njegovih zemljevidov, zato so številne izpeljanke Mercatorjevih zemljevidov del atlasov njegovega zeta Jodocusa Hondiusa (1563–1612) ter Hondiusovega zeta Johannesa Janssoniusa (1588–1664) (Gašperič 2007).

Nizozemec **Willem Janszoon Blaeu** je bil ustanovitelj Blaeujeve kartografske hiše in je skupaj s sinovoma avtor leta 1635 izdanega atlasa *Atlas Novus* (Novi atlas). Vrh družinskega kartografskega dela predstavlja *Atlas Maior* (Veliki atlas), ki je izhajal v letih 1662–1672. Požar leta 1672 je uničil večji del kartografskega gradiva, leto pozneje pa je umrl ustanoviteljev sin Joan I. (1599–1673). Vnuk Joan II. (1610–1644) je prenehal s kartografsko dejavnostjo, nekatere ohranjene odtisne plošče pa je kupil Nizozemec Frederick de Wit (1629 ali 1630–1706). V istem času je na Nizozemskem delovala tudi kartografska založniška **družina Janssonius**, katere ustanovitelj je bil Johannes I. (pred 1597–1629), vidnejši kartograf pa je bil tudi njegov sin Johannes II. (1588–1664). Zaradi podobnosti imen, ki so navedena na zemljevidih, pogosto ni jasno ali je avtor iz družine Blaeu ali Janssonius. Na poznejših priredbah Jansoniusovih zemljevidov kartografske hiše Schenk & Valk so bila imena avtorjev izbrisana ali zamenjana (Raisz 1948; French 1999; Götzfried … 2019b).

Postopoma sta se uveljavili **nemška kartografska šola**, ki je tehnično izpopolnila kartiranje, ter **francoska**, ki je zaslužna za številna geografska in astronomska merjenja. To je bilo tudi obdobje opisov posameznih območij oziroma dežel, katerim so avtorji dodali tudi kartografsko gradivo (Longyka 1999). Iz nemško govorečih dežel je znana družina Merian, kjer so založnik Matthäus Merian (1593–1650) ter sinova Matthäus mlajši (1621–1687) in Caspar (1627–1686) vrsto let izdajali delo *Topographia Germaniae* (Krajepisje nemških dežel) in revijo o zgodovini nemško govorečih dežel z naslovom *Theatrum Europaeum* (Gledališče Evrope) (Wüthrich 1994).

English cartography experienced major shifts in the second half of the sixteenth century under Queen Elizabeth I. The most important mapmaker of this period was **Christopher Saxton** (c. 1540 – c. 1610), who published his *Atlas of the Counties of England & Wales* (Atlas … 2002) in 1579.

Cartographers from central Europe and especially its German-speaking areas were also highly productive in the sixteenth century. The Austrian mapmaker **Wolfgang Lazius** (1514–1565) worked at Emperor Ferdinand I's court. He travelled extensively and authored many historical and cartographic works (Kratochwill 1985). **Cosmographies** were also very common during this period. They contained texts on astronomy, geography, history, weather, and so on, accompanied by illustrations and maps. Among the well-known works of this kind are *Cosmographia seu descriptio totius orbis* (Cosmography or a Description of the Whole World) by the German humanist Peter Apian (a.k.a. Peter Bienewitz, 1495–1552) from 1524 (O'Connor and Robertson 2002) and *Cosmographia* (Cosmography) by the German cartographer **Sebastian Münster** (1488–1552) from 1544, which were reprinted many times (Karrow 1993). Münster's *Cosmographia* is an Enlightenment adaptation of Ptolemy's *Geography*, which acquired the title *Cosmography* thanks to the Italian humanist Jacopo d'Angelo (active c. 1400), who translated Ptolemy's works from Greek into Latin between 1406 and 1410 (Cosgrove 2007; Codicum Facsimiles 2019).

2.3.2 Seventeenth Century

Seventeenth-century European cartography continued to be dominated by the Dutch. Maps became of commercial interest and therefore their design was also very important. The data required to make them were often copied from other maps. Despite new discoveries, many maps were printed until their sale declined. The desire to reduce production costs resulted in slower development of map quality (Raisz 1948). Amsterdam was the cartographic center, where maps were mass-produced, printed, and sold. Mercator's and Ortelius's cartographic tradition was continued by the Hondius, Ottens, and Blaeu families (Longyka 1999). The Flemish **Hondius family** inherited Mercator's printing plates after his death, which is why the atlases of Mercator's son-in-law Jodocus Hondius (1563–1612) and Hondius's son-in-law Johannes Janssonius (1588–1664) feature numerous maps derived from those created by Mercator (Gašperič 2007).

The Dutch cartographer **Willem Janszoon Blaeu** was the founder of the Blaeu map publishing house and coauthored the 1635 *Atlas Novus* (New Atlas) together with his two sons. The family mapmaking business reached its peak with *Atlas Maior* (Great Atlas), which was published from 1662 to 1672. A major portion of their maps were destroyed in a 1672 fire, and the founder's son Joan I (1599–1673) died only a year after that. Willem's grandson Joan II (1610–1644) ended the

Francoz **Nicolas Sanson** (1600–1667) je bil začetnik ene najpomembnejših kartografskih rodbin, saj se je kartografska dejavnost družine Sanson prek sorodstvenih vezi pozneje prenesla na zelo uspešno družino de Vougondy. Sanson je bil kraljevi geograf Ludvika XIII. in Ludvika XIV., ki je z družinskimi člani izdeloval zemljevide (Pelletier 2007). Za izdajo jih je pripravil Alexis Hubert Jaillot (okoli 1632–1712), s katerim veljata za najpomembnejša francoska kartografa 17. stoletja (Gašperič 2007).

V tem obdobju je bilo ugotavljanje lege izbrane točke na Zemlji še vedno izziv, saj natančno določanje geografske dolžine še ni bilo mogoče. Zato so konec 17. stoletja Francozi na različnih koncih sveta sistematično merili mrke Jupitrovih lun. Rezultat je zemljevid sveta iz leta 1682 **Giovannia Domenica Cassinija** po rodu Genovežana (tudi Jean Dominique Cassini, 1625–1712) (Raisz 1948). Cassini je pomagal ustanoviti in voditi observatorij v Parizu. Bil je začetnik znane kartografske družine Cassini, ki je močno vplivala na kakovost francoske kartografije (Konvitz 1987).

Konec 17. in v začetku 18. stoletja je deloval tudi **Vincenzo Maria Coronelli** (1650–1718). Znan je predvsem po izdelavi globusov sveta in nebesnih teles, izdal pa je tudi atlas *Atlante Veneto* (Beneški atlas) ter bil ustanovitelj prvega geografskega društva *Accademia Cosmografica degli Argonauti* (Kozmografska akademija argonavtov) v Benetkah (Raisz 1948).

2.3.3 Osemnajsto stoletje

V 18. stoletju je kartografska stroka močno napredovala. Vzroke za to lahko iščemo v politični, upravni ali vojaški želji oziroma nuji po natančnih izmerah in prikazih ozemelj. Kažejo se tudi težnje po poenotenju merskega sistema. Druga polovica stoletja je bila tudi čas začetkov triangulacijskih metod za izmero površja, ki so močno povečale natančnost zemljevidov.

Francija je v tem obdobju postala vodilna kartografska sila Evrope. Razlika med kartografijo 17. stoletja (prevlada **nizozemske kartografske šole**) in 18. stoletja (prevlada **francoske kartografske šole**) je v večjem znanstvenem pristopu, ki je temeljil na meritvah in podatkih. Obdobje razsvetljenstva oziroma »obdobje razuma« se je kazalo tudi v kartografiji. Nizozemsko, bolj tržno usmerjeno kartografijo 17. stoletja, je zamenjala francoska, bolj znanstveno usmerjena kartografija, ki ji je bila kakovost izdelave pomembnejša od zaslužka. Temeljila je tudi na novejših pripomočkih, ki so omogočali natančnejše meritve in posledično bolj kakovostne kartografske prikaze (Raisz 1948). Anglež John Hadley (1682–1744) in Američan Thomas Godfrey (1704–1749) sta leta 1731, ločeno drug od drugega, izumila napravo, ki velja za predhodnico oktanta in sekstanta. Razlika med njima je (le) v različni zmožnosti merjenja kotov (Sekstant 1961). Angleški optik Jesse Ramsden (1735–1800) je izdelal zelo natančne naprave, kot so sekstant, teodolit in različni barometri, ki so omogočali natančnejše

family map-publishing business, and some of the preserved printing plates were bought by the Dutch cartographer Frederick de Wit (1629 or 1630–1706). During that same time, the **Janssonius** map publishing company also operated in the Netherlands. It was founded by Johannes I (before 1597–1629), whose son Johannes II was also a prominent mapmaker (1588–1664). Because the names provided on the maps are so similar, it is often unclear whether the author came from the Blaeu or Janssonius family. In later adaptations of Jansonius's maps by Schenk & Valk, the names of authors were deleted or changed (Raisz 1948; French 1999; Götzfried … 2019b).

Gradually, the **German and French mapmaking schools** also grew in importance; the former made technical improvements in the field, and the latter can be credited with a number of geographical and astronomical measurements. This period also produced many descriptions of individual areas or countries, to which maps were added (Longyka 1999). A well-known family in the German-speaking environment was the Merian family. The publisher Matthäus Merian (1593–1650) and his sons Matthäus Jr. (1621–1687) and Caspar (1627–1686) published the work *Topographia Germaniae* (Topography of Germany) and the journal on the history of German-speaking lands *Theatrum Europaeum* (European Theater) for many years (Wüthrich 1994).

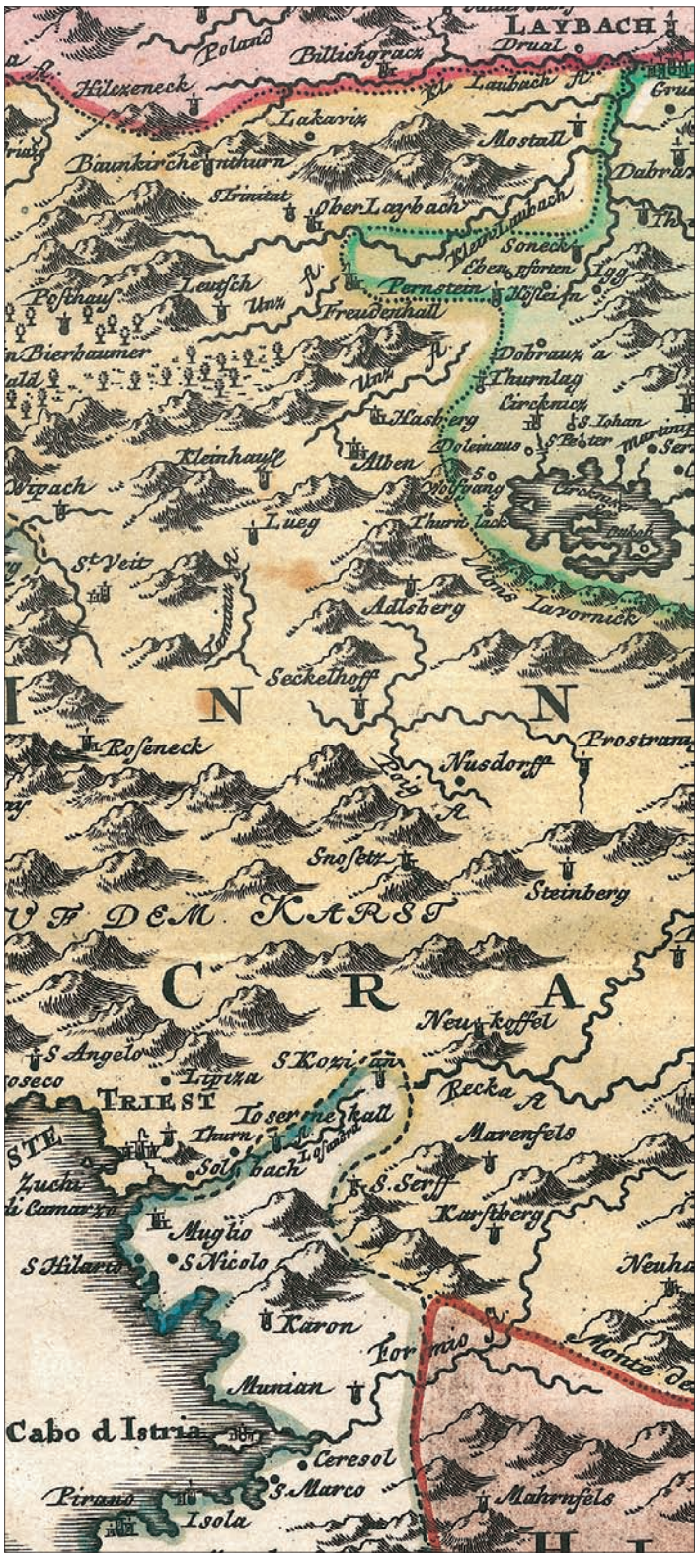
The French cartographer **Nicolas Sanson** (1600–1667) was the founder of one of the most important mapmaking dynasties, with the Sanson family mapmaking activity later being passed down to the very successful de Vougondy family through kinship. Sanson was geographer to kings Louis XIII and Louis XIV. He made maps together with other members of his family (Pelletier 2007), and their maps were prepared for publication by Hubert Jaillot (c. 1632–1712). He and Sanson are considered the most important seventeenth-century French cartographers (Gašperič 2007).

During that time, defining the location of a selected point on Earth was still a challenge because accurate calculation of longitude was not yet possible. Therefore, at the end of the seventeenth century the French systematically measured eclipses of Jupiter's moons in different parts of the world, resulting in the 1682 world map by **Giovanni Domenico Cassini**, a native of Genoa, also known as Jean-Dominique Cassini (1625–1712; Raisz 1948). Cassini helped establish and run the Paris observatory. He was the founder of the well-known Cassini family of mapmakers, which had a strong influence on the quality of French cartography (Konvitz 1987).

The late seventeenth and the early eighteenth century was also marked by the activity of **Vincenzo Maria Coronelli** (1650–1718), who is primarily known for his terrestrial and celestial globes. He also published the monumental *Atlante Veneto* (Venetian Atlas) and was the founder of the first

meritve (Allen 1997). Anglež John Harrison (1693–1776) je leta 1735 izumil natančen kronometer (John … 2015), s katerim je bilo rešeno vprašanje določanja geografske dolžine.

Na kopnem se je uveljavil **triangulacijski sistem kartiranja**, ki so ga kot prvi uporabili Francozi. Pri takšnem načinu kartiranja gre za oblikovanje mreže trikotnikov na kartiranem



Slika 2: Območje med Tržaškim zalivom in Ljubljano s Cerkniškim jezerom na zemljevidu *Tabula Ducatus Carnioliae, Vindorum Marchiae et Histriae* avtorja Johanna Baptista Homanna iz začetka 18. stoletja.
Figure 2: The area between the Bay of Trieste and Ljubljana with Lake Cerknica on the Map of the Duchy of Carniola, the Windic March, and Istria by Johann Baptist Homann from the early eighteenth century.

Venetian geographical society, *Accademia Cosmografica degli Argonauti* (Cosmographic Academy of Argonauts; Raisz 1948).

2.3.3 Eighteenth Century

Cartography made great advances in the eighteenth century, most likely due to political, administrative, or military desires and the necessity for accurate territorial surveys and maps. There were also tendencies to make the measurement system uniform. The second half of the century also saw the introduction of triangulation methods in land surveying, which significantly improved the accuracy of maps.

During this period, France became the leader in European cartography. The difference between seventeenth-century cartography (dominated by the **Dutch school**) and eighteenth-century cartography (dominated by the **French school**) lies in a more scientific approach, which was based on measurements and data. The Enlightenment or »period of reason« was also reflected in cartography. The seventeenth-century Dutch commercially oriented cartography was replaced by French cartography, which was more scientific and placed quality before profit. In addition, it was based on more recent tools that allowed more accurate measurements and hence higher-quality maps (Raisz 1948). In 1731, the English mathematician John Hadley (1682–1744) and the American inventor Thomas Godfrey (1704–1749) independently invented a device that is considered the predecessor of the octant and the sextant, which (only) differ in terms of their angle measurement scale (Sekstant 1961). The English optician Jesse Ramsden (1735–1800) produced high-accuracy devices, such as sextants, theodolites, and various barometers, which allowed more accurate measurements (Allen 1997). The Englishman John Harrison (1693–1776) invented a high-accuracy chronometer in 1735 (John … 2015), which solved the problem of calculating longitude.

On land, **triangulation** became an established mapmaking method, which was first used by the French. This type of mapping involves establishing a triangulation network of the territory mapped that serves as the basis for further mapping (Triangulacija 1980). In 1744, César-François Cassini de Thury (1714–1784) produced a single-sheet map of France at a scale of 1:1,800,000, showing the country as a network of eight hundred triangles. In 1745, this was followed by a more accurate eighteen-sheet map at a scale of 1:878,000. After his death, his son Jacques-Dominique, Count **of Cassini** (1748–1845), continued his work, resulting in the 180-sheet 1:86,400 map *Carte géométrique de la France* (Geometric Map of France), also known as *Carte de Cassini* (the Cassini Map), published in 1789. This map represents the **beginning of large-scale national mapping** (Library … 2010).

The **Robert de Vaugondy** family was among the leading cartographers in France. Gilles Robert de Vaugondy (1688–1766)

območju, ki služi kot podlaga za nadaljnje kartiranje (Triangulacija 1980). Leta 1744 je César François Cassini de Thury (1714–1784) na enem listu izdelal zemljevid Francije v merilu 1 : 1.800.000 in na njem označil celotno triangulacijsko mrežo z 800 trikotniki. Leta 1745 je sledil natančnejši zemljevid na 18 listih v merilu 1 : 878.000. Po očetovi smrti je delo nadaljeval sin Jacques-Dominique, grof **de Cassini** (1748–1845). Rezultat njegovega dela je bil leta 1789 izdan zemljevid *Carte géométrique de la France* (tudi *Carte de Cassini*, Geometrijski zemljevid Francije), sestavljen iz 180 listov v merilu 1 : 86.400. Delo predstavlja **začetek nacionalnega kartiranja držav** v večjem merilu (Library … 2010).

V Franciji je bila med vodilnimi kartografi družina **Robert de Vaugondy**. Oče Gilles (1688–1766) in sin Didier (okoli 1723–1786) sta izdelovala zemljevide, atlase in globuse. Znani so njuni atlasi z naslovom *Atlas Universel* (Splošni atlas), ki so veljali za zelo kakovostna in redno ažurirana kartografska dela (Map History 2011a). Temelj za prve atlase je bila kartografska zapuščina Nicolasa Sansona, s katerim so bili de Vaugondyji v daljnem sorodstvu (Map History 2011b).

V Franciji in širše je bilo zelo pomembno delo Guillauma Delisla (1675–1726). Zaslužen je za odpravo mnogih napak, ki so se ponavljaje na zemljevidih do začetka 18. stoletja, na primer velikost Sredozemlja, ki se netočno prikazuje vse od Ptolemaja (Raisz 1948).

Na nemško govorečem območju sta bili med bolj prodornimi založniškimi hišami družini Homann in Seutter. Značilnost njihovih zemljevidov je veliko podrobnosti (slika 2). Zaradi številnih podatkov, slik in opomb mnogi zemljevidi delujejo prenatrpano (Raisz 1948). Nemški založnik Matthias Seutter (tudi Georg Matthäus Seutter, 1678–1757) in njegov zet Tobias Conrad Lotter (1717–1777) sta številne Homanove zemljevide z manjšimi spremembami izdajala še vrsto let po njegovi smrti.

Rast števila geografskih podatkov in kakovost zemljevidov sta vplivali na zmanjšanje poudarjenosti barvnih dekoracij, ki so v tem obdobju postopoma že nanesene v bolj umirjenih tonih, služile pa so prikazu meja in ločevanju posameznih območij. Konec 18. stoletja se je začel razvoj **tematske kartografije** (Wallis in Robinson 1987).

2.3.4 Devetnajsto stoletje

V 19. stoletju je postala vsebina na zemljevidih vse podrobnejša, podatki pa bolj natančni. Na to je vplival tudi razvoj takrat nove tiskarske tehnike, imenovane **litografija** (grško *lithos*, kamen in *graphein*, pisati) ali kamnotisk. Ta je omogočala hitrejše in cenejše večbarvno tiskanje (Fridl 2005). Leta 1796 jo je izumil Nemec Alois Senefelder (1771–1834) (Alois … 2020).

Do tega obdobja so evropske države uporabljale različne merske sisteme. Kljub prejšnjim pobudam o poenotenju je

and his son Didier (c. 1723–1786) produced maps, atlases, and globes. Well-known is their *Atlas Universel* (General Atlas), which at the time was valued as a high-quality and regularly updated cartographic work (Map History 2011a). Their first atlases were based on the mapmaking legacy of Nicolas Sanson, a distant relative of de Vaugondys (Map History 2011b).

Very important in France and beyond was the work of Guillaume Delisle (1675–1726). He is credited with correcting many inaccuracies that had been repeated on maps until the early eighteenth century, such as the size of the Mediterranean, which had been misrepresented ever since Ptolemy (Raisz 1948).

Among the more influential map publishing families in the German-speaking environment were the Homanns and the Seutters, whose maps were characterized by an enormous amount of detail (Figure 2). Because they were full of insets, pictures, and notes, many of them come across as overcrowded (Raisz 1948). The German map publisher Matthias Seutter (a.k.a. Georg Matthäus Seutter, 1678–1757) and his son-in-law Tobias Conrad Lotter (1717–1777) continued to publish many of Homann's maps with minor modifications long after his death.

The increase in geographical data and map quality resulted in less striking color decorations, which during this period already gradually began to be applied in mellower shades and were used to indicate borders and distinguish between individual areas. **Thematic mapping** began to develop at the end of the eighteenth century (Wallis and Robinson 1987).

2.3.4 Nineteenth Century

In the nineteenth century, the information displayed on maps became increasingly detailed and accurate. This was also influenced by the development of a new printing technique called **lithography** (from Greek *lithos* 'stone' and *graphein* 'to write'), which allowed faster and more cost-effective multicolor printing (Fridl 2005). It was invented in 1796 by the German Alois Senefelder (1771–1834; Alois … 2020).

Until this period, European countries used different measurement systems. Despite previous initiatives to introduce a uniform system, most countries only did so in the nineteenth century. France was the first to introduce the metric system in 1795 (Wight Hat 2015). In Austria-Hungary the metric system was adopted by law in 1871, but it only became obligatory in 1876 (Bratec Mrvar et al. 2011). In addition to these two countries, the **Meter Convention** was signed by fifteen other countries in 1875 (The Metre … 2015). In this way a uniform measurement system began to apply, which partly simplified mapmaking and, most importantly, allowed easier comparison. Because the metric system was only gradually

enotni merski sistem večina držav uvedla šele v 19. stoletju. Prva je metrični merski sistem uvedla Francija leta 1795 (Wight Hat 2015), Avstro-Ogrska pa ga je zakonsko prevzela leta 1871, a dejansko šele 1876 (Bratec Mrvar s sodelavci 2011). Poleg omenjenih je leta 1875 tako imenovano **Metrsko konvencijo** podpisalo še petnajst drugih držav (The Metre … 2015), s čimer so poenotili merski sistem in s tem delno olajšali kartografsko delo ter predvsem omogočili lažjo primerjavo. Zaradi postopne uveljavitve metrskega sistema so pri večini del 19. stoletja še prevladovale dotedanje merske enote, večinoma ena od milj, na primer zemljepisna ali geografska, nemška, avstrijska, italijanska in francoska.

Pri določanju in risanju stopinjskih mrež je od njenih začetkov izhodiščni vzporednik ekvator. Izhodiščni poldnevnik pa si je vsaka država določala po svoje, najpogosteje je bil to tisti poldnevnik, ki je potekal prek ozemlja njihovih držav (na primer poldnevnik, ki poteka preko otoka Ferro na Kanarskem otočju v Španiji, naselja Pulkovo blizu Sankt Peterburga v Rusiji, Pariza v Franciji, griča Monte Mario v bližini Rima v Italiji, Greenwicha v Londonu v Angliji). Neenotnosti so odpravili šele s konvencijo na mednarodnem geodetskem kongresu v Washingtonu leta 1884, ko so za izhodiščni poldnevnik določili tistega, ki poteka skozi Greenwich (Project Gutenberg 2006).

Kartografska dejavnost v Evropi je v drugi polovici 19. stoletja, zlasti pa ob njegovem koncu, postajala zelo nacionalno usmerjena. Njen razvoj so pogosto vodile politika in nacionalne težnje posameznih držav. Obe veji moderne kartografije, tako vojaška kot civilna, sta postali orodje v rokah oblasti in vojske.

Lep primer politične in vojaške želje po prevladi je kartiranje celotne vzhodne obale Jadranskega morja med letoma 1806 in 1809. Kartiranje je ukazal francoski cesar Napoleon Bonaparte takoj po vojaškem spopadu med Francijo in Habsburško monarhijo leta 1805 (Šumrada 2012). Že pred tem so v Habsburški monarhiji izvedli vojaško kartografsko izmero (1763–1787; slika 40) (Rajšp 1996). Razvoj kartografskih tehnik in načinov prikazovanja je bil v tem času skoraj izključno v rokah vojaških geografskih in kartografskih ustanov, ki so tudi edine imele dovolj sredstev, izšolanega in usposobljenega osebja in naprav ter dostop do podatkov. Civilni kartografski dejavnosti je bilo dovoljeno posredovanje le omejenega obsega vojaških kartografskih dosežkov (Gašperič 2007).

V 19. stoletju je popolnoma prevladala uporaba **trigonometrične metode**. Za prikaz površja so namesto oblike krtin oziroma preprostih hribčkov (na primer slike 2, 22 ali 42) začeli uporabljati črtkanje (na primer slike 3, 40 ali 58). Metoda se je izkazala za zelo natančno, k čemur je pripomogla njena znanstvena utemeljitev leta 1799 s strani Johana Georga Lehmanna (1765–1811) (Fischer 1985). To je tudi obdobje, ko so v Habsburški monarhiji zelo podrobno **vojaško kartirali** državno ozemlje ter izvajali **katastrske izmere** (slika 47; Slak 2019).

applied in practice, previous measurement units, primarily one of the historical geographical miles (the German, Austrian, Italian, or French mile), continued to predominate on most nineteenth-century maps.

The Equator was used as the prime parallel in defining and drawing graticules from the very beginning. However, the prime meridian varied by country; most often, the meridian running through an individual country's territory was selected (e.g., the one passing through El Hierro or Ferro in the Canary Islands, Spain, Pulkovo near Saint Petersburg in Russia, Paris in France, Mount Mario (*Monte Mario*) near Rome in Italy, or Greenwich in London (England). Inconsistencies were only resolved at the 1884 International Meridian Conference in Washington, where the Greenwich Meridian was defined as the prime meridian (Project Gutenberg 2006).

In the second half of the nineteenth century and especially toward its end, mapmaking in Europe began to be increasingly nationally oriented. Its development was often directed by the policy and national tendencies of individual countries. Both branches of modern cartography (i.e., military and civil) became tools in the hands of the authorities and the military.

The desire for political and military dominance can be illustrated with the mapping of the entire eastern Adriatic coast between 1806 and 1809 commissioned by Napoleon Bonaparte immediately after the 1805 military conflict between France and the Habsburg Monarchy (Šumrada 2012). A military land survey and mapping had already been conducted in the Habsburg Monarchy before that (1763–1787; Figure 40; Rajšp 1996). During this time, the development of mapping techniques and display methods was nearly exclusively in the hands of military geographical and mapping institutions, which were also the only ones with sufficient funds, trained and experienced staff, devices, and access to data. Civil mapmakers were only allowed to use and present a limited extent of military mapping achievements (Gašperič 2007).

Trigonometry had absolute dominance in nineteenth-century mapmaking. Hachures (e.g., Figures 2, 22 or 42) began to be used instead of molehills or simple hills (e.g., Figures 3, 40 or 58) to represent the relief. This method proved to be very accurate, which was aided by its 1799 standardization by Johan Georg Lehmann (1765–1811; Fischer 1985). This was also the period in which detailed **military mapping** of national territory and **cadastral surveys** were conducted in the Habsburg Monarchy (Figure 47; Slak 2019).

3 Kartografski prikazi slovenskega ozemlja

Ozemlje današnje Slovenije so prikazovali že najstarejši evropski zemljevidi. Geografska lega in večstoletna vpetost v Habsburško monarhijo pa so botrovali vplivu srednjeevropskega kulturnega prostora tudi na področju kartografije.

Slovensko ozemlje se je na zemljevidih pogosteje upodabljalo od začetka 16. stoletja. Zaradi takratne obrobne lege in nepoznavanja ozemlja je bilo območje sprva prikazano dokaj površno. To se je spremenilo do 18. stoletja, ko so domači ter na slovenskem ozemlju živeči tuji raziskovalci izmerili in prikazali posamezne dele slovenskih dežel. Z narodnim preporodom v drugi polovici 19. stoletja so nastali prvi zemljevidi slovenskega etničnega ozemlja.

3.1 Antika in srednji vek

V antiki je bilo današnje slovensko ozemlje prikazano kot del širšega prostora. Prav gotovo je bilo prikazano v Ptolemajevem **Geografskem priročniku** iz 2. stoletja, saj je v osmi knjigi renesančne izdaje tega dela zbrano sedemindvajset zemljevidov takrat znanega sveta, na katerih je upodobljeno tudi današnje slovensko ozemlje (Slovenci … 1986).

Območje današnje Slovenije je vključeno v več itinerarijev, na primer v *Itinerarij Hierosolymitanum* ali *Burdigalense* oziroma **Jeruzalemski potopis**. Domnevno ga je napisal romar iz Francije med letoma 333 in 334, ki je v Sveto deželo romal prek severa Italije, Slovenije in Balkanskega polotoka (Stewart 1999).

Območje današnje Slovenije najdemo na rimskih cestnih zemljevidih, na primer na zemljevidu ***Tabula Peutingeriana***. Na njem je navedeno več slovenskih krajev, na primer Logatec (*Longatico*), Vrhnika (*Nauportus*), Ljubljana (*Emona*). Poleg cest in poti so v rimskih miljah vpisane tudi razdalje med kraji (Mihevc 1998).

Tudi v srednjem veku je bilo slovensko ozemlje prikazano le kot del širšega prostora. Leta 1119 je Guido iz Pise (neznano–1169) narisal **zemljevid zahodnega Rimskega cesarstva**. Na njem se za območje Koroške prvič uporabi ime *Carantanos* (Höck in Leitner 1984).

Okrog leta 1235 je bil v samostanu v Ebstorfu v Nemčiji naslikan tako imenovan **Ebstorfski zemljevid**. Velja za največji znani srednjeveški zemljevid, saj je meril 3,58 × 3,56 metra, žal pa je bil med drugo svetovno vojno uničen (Slovenci … 1986).

3 Slovenian Territory Depicted on Maps

The territory of what is now Slovenia was already depicted on the oldest European maps. Due to its geographical location and the fact that is was part of the Habsburg Monarchy for several centuries, the impact of the central European cultural environment was also reflected in cartography.

Slovenian territory began to be more frequently depicted on maps at the beginning of the sixteenth century. Because of its marginal location and unfamiliarity with the area, it was initially represented fairly inaccurately. This changed till the eighteenth century, when local and other researchers living in Slovenian territory surveyed and mapped individual parts of this area. The national awakening movement in the second half of the nineteenth century gave rise to the first maps of Slovenian ethnic territory as a whole.

3.1 Antiquity and the Middle Ages

In Antiquity, the territory of what is now Slovenia was depicted as part of the wider region. It must have been shown in Ptolemy's ***Geography*** from the second century AD because book eight of its Renaissance edition features twenty-seven maps of the world known at that time, including what is now Slovenian territory (Slovenci … 1986).

The territory was included in several *itineraria*, such as *Itinerarium Hierosolymitanum* or *Burdigalense*, also known as the **Jerusalem Itinerary**. This was written between 333 in 334 by a French pilgrim, who traveled to the Holy Land through northern Italy, Slovenia, and the Balkans (Stewart 1999).

The territory of present-day Slovenia can also be found on Roman road maps, such as ***Tabula Peutingeriana***, which provides the names of several Slovenian towns, including Logatec (*Longatico*), Vrhnika (*Nauportus*), and Ljubljana (*Emona*). In addition to roads and paths, the map also provides the distances between places in Roman miles (Mihevc 1998).

During the Middle Ages, Slovenian territory continued to be depicted as part of the wider area. In 1119, Guido of Pisa (unknown–1169) drew a **map of the Western Roman Empire**, using the name *Carantanos* for the first time to refer to Carinthia (Höck and Leitner 1984).

Around 1235, the **Ebstorf Map** was produced at a convent in Ebstorf, Germany. It is considered the largest medieval map,

Na njem je bil prvič uporabljen izraz *Carinthia* za Koroško (Höck in Leitner 1984).

V 15. stoletju se je slovensko ozemlje pogosto pojavljalo na velikih zemljevidih Evrope in sveta. Leta 1439 je bil izdelan **zemljevid Srednje Evrope** Nicolausa Cusanusa (1401–1464), ki prikazuje ozemlje današnje Slovenije na južnem delu prikaza (Slovenci … 1986; Marković 1993).

Leta 1459 je Benečan Mauro (okoli 1390–okoli 1460) izdelal velik **stenski zemljevid sveta**, na katerem je bilo tudi območje današnje Slovenije ter izstopajoč istrski polotok. Bil je okrogle oblike, premera približno 1,95 metra, v splošnem pa slikovno bogatejši in kartografsko podrobnejši kot drugi kartografski izdelki tistega časa (Goss 1993).

Leta 1492 in 1501 je Erhard Etzlaub (med 1455 in 1465–1532) izdelal **romarska zemljevida**, na katerih je prikazano tudi ozemlje današnje Slovenije. Oba sta bila orientirana proti jugu, kar naj bi bralcu (romarju) omogočalo lažjo uporabo, saj je bilo mesto Rim vedno pred njimi oziroma na zemljevidu zgoraj (Höck in Leitner 1984).

Leta 1493 je Hartmann Schedel (1440–1514) objavil delo **Nürnberška kronika**, v katero je vključil tudi zemljevid večjega dela Evrope (Kozličić 1995). Zemljevid je orientiran proti severu, na njegovem južnem delu pa je upodobljeno območje današnje Slovenije in del Jadranskega morja.

3.2 Novi vek

3.2.1 Šestnajsto stoletje

Številčnost kartografskih prikazov slovenskega ozemlja je v tem obdobju narasla, a so ti zaradi nepoznavanja območja in uporabe napačnih podatkov ter še ne dovolj kakovostnih kartografskih in tiskarskih tehnik vsebovali številne napake (Fridl in Šolar 2011). Prevladovali so zemljevidi srednjega in malega merila celotne Evrope ali njenih delov.

Pietro Coppo (1469 ali 1470–1555 ali 1556) je leta 1525 izdal zemljevid **Istre** (slika 5). Zemljevid prikazuje območje današnje Slovenije, Istre in Dalmacije. Natančno so prikazane obale, zaradi nepoznavanja kopnega pa se popačenost z oddaljenostjo od morja veča (Kozličić 1995; Žitko 1999; Gašperič in Zorn 2011). To je najstarejši zemljevid istrskega polotoka ter najstarejši podrobnejši prikaz dela slovenskega ozemlja (Terčon, Bonin in Čerče 2006). Velja za najkakovostnejšo kartografsko upodobitev istrskega polotoka do sredine 18. stoletja (Longyka 1999).

Sredi 16. stoletja je bil v lesorezni tehniki izdelan zemljevid ***Descriptio totius Illyridis*** (Opis celotne Ilirije) (slika 9) Sebastiana Münstra, ki je bil Münstrovim izdajam Kozmografije dodan

having measured 3.58 by 3.56 m, but unfortunately it was destroyed during the Second World War (Slovenci … 1986). On it, the name *Carinthia* was first used for Carinthia (Höck and Leitner 1984).

During the fifteenth century, Slovenian territory often appeared on large maps of Europe and the world. In 1439, Nicolaus of Cusa (1401–1464) produced a **map of central Europe**, showing the territory of what is now Slovenia to the south (Slovenci … 1986; Marković 1993).

In 1459, Fra Mauro from Venice (c. 1390 – c. 1460) produced a large **wall map of the world**, which also included the present-day Slovenian territory and a prominent Istrian peninsula. It was round, measuring about 1.95 m in diameter, and in general it was richer in illustrations and more detailed than other maps of that time (Goss 1993).

In 1492 and 1501, Erhard Etzlaub (born 1455–1465, died 1532) produced two **pilgrimage maps** also showing the territory of today's Slovenia. They both had south at the top, which was supposed to aid users (pilgrims) because this way Rome was always in front of them or at the top of the map (Höck and Leitner 1984).

In 1493, Hartmann Schedel (1440–1514) published his ***Nuremberg Chronicle***, which also included a map of a large portion of Europe (Kozličić 1995). This map has north at the top, with present-day Slovenian territory and part of the Adriatic depicted to the south.

3.2 Modern Period

3.2.1 Sixteenth Century

The number of maps also featuring Slovenian territory grew during this period, but due to unfamiliarity with the area and the use of incorrect data and low-quality mapping and printing techniques they contained many errors (Fridl and Šolar 2011). Medium- or small-scale maps of all of Europe or its parts predominated.

Pietro Coppo (born 1469 or 1470, died 1555 or 1556) published a map of **Istria** (Figure 5) in 1525, showing the area of what is now Slovenia, Istria, and Dalmatia. It depicts the coastline with great accuracy, but, due to unfamiliarity with the interior, the accuracy decreases with distance from the sea (Kozličić 1995; Gašperič and Zorn 2011). This is the oldest map of the Istrian peninsula and the oldest detailed depiction of part of Slovenian territory (Terčon, Bonin, and Čerče 2006). It is considered the highest-quality depiction of the Istrian peninsula on a map until the mid-eighteenth century (Longyka 1999).

vsaj od leta 1552 dalje. Zemljevid je orientiran proti jugu in prikazuje dele današnjih Slovenije, Hrvaške, Bosne in Hercegovine ter severnega Jadrana z otoki. Izstopa gozdni pas v obliki drevoreda, ki ponazarja sklenjeno gozdnato hribovje od Trnovskega gozda, prek Hrušice, Snežnika, Gorskega kotarja do Bosne. Prikaz ozemlja je zelo preprost, vsebuje pa večje število krajevnih imen na ozemlju današnje Slovenije.

Sebastian Münster je sredi 16. stoletja v Kozmografijah objavil manjši zemljevid brez naslova, ki prikazuje Kranjsko z Istro. Nastal je neodvisno od Coppovega zemljevida Istre, prikaz pa je preprost, površen in netočen (Lago in Rossit 1981; Lago 1996).

V drugi polovici 16. stoletja je bil v Münstrovih Kozmografijah objavljen tudi lesorezni zemljevid ***Sclauonia oder Windisch Marck, Bossen, Crabaten*** (Slavonija ali Slovenska marka, Bosna, Hrvaška), ki je bil izdelan pod vplivom kartografskih del Hirschvogla (Lago in Rossit 1981).

Nemec Augustin Hirschvogel (1503–1553) je pripravil zemljevid **Ogrske**, ki je bil natisnjen leta 1565 (Korošec 1978). Znan je kot podlaga številnih poznejših priredb zemljevidov teh območij (Longyka 1999).

Leta 1560 je bil izdan zemljevid ***Geografia particolare d'una gran parte dell'Europa, nuovamente descritta co i confini suoi*** … (Podroben zemljevid velikega dela Evrope, na novo orisane z njenimi mejami …) Piemontčana Giacoma Gastaldija, ki je takrat deloval v Benetkah. Prikazuje območje Balkanskega polotoka, pri čemer so obalna območja prikazana bolj natančno kot celinska (Marković 1993).

Leta 1561 je izšla zbirka enajstih zemljevidov z naslovom *Typi chorographici Provinciarum Austriae* (Topografski tipi avstrijskih dežel) začetnika avstrijske kartografije Wolfganga Laziusa (Lazius 1972; Holzer s sodelavci 2015). Slovensko ozemlje je prikazano na štirih zemljevidih. Med njimi je zemljevid ***Ducatus Carniolae et Histriae una cum Marcha Windorum*** (Vojvodina Kranjska in Istra s Slovensko marko), ki je prvi znani samostojni prikaz vojvodine Kranjske (slika 10). Gre za navidezno lep ovalni zemljevid v obliki dvoglavega orla, ki ga krasi deset heraldičnih grbov. Vsebuje številne nove podatke (na primer prikaz in poimenovanje slapa Savica), a s številnimi napakami (Slovenci … 1986; Longyka 1999).

Leta 1563 je Benečan Giovanni Francesco Camocio (1501–1575) narisal zemljevid, ki ga je leta 1565 predelal Ferrando Bertelli (deloval med 1556 in 1572) in izdal pod naslovom ***Nova discrittione della Dalmatia et Crovatia*** (Novi opis Dalmacije in Hrvaške). Zemljevid prikazuje del današnjega ozemlja Slovenije, Istro, del Dalmacije, Slavonijo in del Bosne (Slovenci … 1986; Marković 1993).

Leta 1569 je nastal zemljevid ***Ducatus Carniolae una cum Marchia Windorum*** (Vojvodina Kranjska s Slovensko marko)

In the mid-sixteenth century, Sebastian Münster produced the woodcut map ***Descriptio totius Illyridis*** (Description of All Illyria; Figure 9), which was appended to his editions of *Cosmographia* (Cosmography) at least from 1552 onward. The south-up map shows parts of what are now Slovenia, Croatia, Bosnia and Herzegovina, and the northern Adriatic with islands. One of the most striking features is a forest belt in the form of a tree-lined avenue, illustrating the wooded hill range extending from the Trnovski gozd Plateau, across the Hrušica and Snežnik plateaus and Gorski Kotar, to Bosnia. The territory is depicted in a very simple way, but the map does contain a large number of place names in what is now Slovenia.

In the mid-sixteenth century, Sebastian Münster published a minor untitled map in his editions of *Cosmographia*, showing the Carniola with Istria. It was produced independently of Coppo's map of Istria, and it is very simple, superficial, and inaccurate (Lago and Rossit 1981; Lago 1996).

In the second half of the sixteenth century Münster's Cosmographies had also included the woodcut map ***Sclauonia oder Windisch Marck, Bossen, Crabaten*** (Slavonia or the Windic March, Bosnia, Croatia), which was influenced by Hirschvogel (Lago and Rossit 1981).

The German cartographer Augustin Hirschvogel (1503–1553) produced a map of **Hungary** printed in 1565 (Korošec 1978). It is known to have served as a basis for many later adaptations of maps of these areas (Longyka 1999).

In 1560, Giacomo Gastaldi, a native of Piedmont, who worked in Venice at the time, published the map ***Geografia particolare d'una gran parte dell'Europa, nuovamente descritta co i confini suoi*** … (Detailed Map of a Large Part of Europe, Newly Outlined with Its Borders …). It shows the Balkan Peninsula, whereby the coastline is depicted in greater detail than the interior (Marković 1993).

In 1561, a collection of eleven maps titled *Typi chorographici Provinciarum Austriae* (Topographical Types of Austrian Provinces) by the pioneer of Austrian cartography, Wolfgang Lazius, was published (Lazius 1972; Holzer et al. 2015). Slovenian territory is shown on four maps, including ***Ducatus Carniolae et Histriae una cum Marcha Windorum*** (The Duchy of Carniola and Istria with the Windic March), which is the first known independent map of Carniola (Figure 10). This is an attractive oval map stylized as a two-headed eagle decorated with ten coats of arms. It contains new information (e.g., it shows and names Savica Falls), but much of it is inaccurate (Slovenci … 1986; Longyka 1999).

In 1563, the Venetian Giovanni Francesco Camocio (1501–1575) drew a map that was reworked in 1565 by Ferrando Bertelli (active between 1556 and 1572), who published it

(slika 15) Benečana Bolognina Zaltierija (tudi Bolognius Zalterius; živel v drugi polovici 16. stoletja) (Orožen 1901). Avtor se je pri izdelavi zgledoval po Laziusovem zemljevidu Kranjske (Marković 1993).

Leta 1570 je Abraham Ortelius v prvo izdajo atlasa *Theatrum Orbis Terrarum* (Gledališče sveta) vključil zemljevid ***Schlavoniae, Croatiae, Carniae, Istriae, Bosniae, finitimarumque regionum nova descriptio*** (Novi prikaz Slavonije, Hrvaške, Kranjske, Istre, Bosne in sosednjih pokrajin) (slika 16). Gre za predelan Hirschvoglov zemljevid Ogrske (Kratochwill 1986), ki ga je Ortelius v pomanjšani obliki vključil v svoj atlas. Zemljevid v zgornjem delu prikazuje ozemlje med Osojskim jezerom in srednjo Donavo, v spodnjem delu pa območje med Jadranskim morjem in Sarajevom ter Višegradom. Jadranska obala in otoki so še zelo podobni njihovim upodobitvam na Ptolemajevih zemljevidih, notranjost pa je že bolj točno prikazana. Leta 1573 je v tretji izdaji atlasa povzel še Coppov zemljevid Istre ter zemljevida *Carinthiae ducatus, et Goritiae palatinatus* (Vojvodina Koroška in Grofija Goriška) in *Goritiae, Karstii, Chaczeolae, Carniolae, Histriae, et Windorum marchae descrip*. (Opis Goriške, Krasa, Kočevske, Kranjske, Istre in Slovenske marke) Wolfganga Laziusa (Slovenci … 1986).

Leta 1572 je nastal zemljevid ***Illyricum*** (Ilirija) (slika 17) Madžara Ioanesa Sambucusa (tudi János Zsámboki, 1531–1584), ki je poznan predvsem po zbiranju kartografskega gradiva (Török 2007). Gre za dopolnjen Hirschvoglov zemljevid Ogrske. Zemljevid je Ortelius leta 1573 objavil v drugi izdaji svojega atlasa. Del zemljevida (na primer Istra in Kvarner) je narisan zelo točno, ostali deli (na primer preostala jadranska obala ter celina) pa manj (Bohinec 1969; Lago in Rossit 1981; Kozličić 1995).

Leta 1589 je izšel zemljevid ***Forum Iulium, Karstia, Carniola, Histria et Windorum Marchia*** (Furlanija, Kras, Kranjska, Istra in Slovenska marka) (slika 18) Gerharda Kremerja Mercatorja, ki je podlaga številnim poznejšim zemljevidom (Marković 1993). Mercator je podatke za območje današnje Slovenije povzel po Orteliusu, ta pa po Laziusovih zemljevidih, zato so na njem številne napake (Shaw in Čuk 2015).

Zemljevid ***Carniolae Chaziolae Q3 Ducatus nec non et Goritiae Comitatus*** … (Vojvodina Kranjska in Kočevsko kakor tudi grofija Goriška …) je leta 1593 izšel v atlasu *Speculum Orbis Terrae* (Ogledalo sveta) (slika 19). Zemljevid je priredba Laziusovih zemljevidov iz zbirke avstrijskih dežel iz leta 1561. Priredil ga je Flamec Gerard de Jode (1509–1591), po njegovi smrti pa ga je v omenjenem atlasu izdal njegov sin Cornelis (1568–1600) (Collection … 2020a). Posebnosti zemljevida so orientacija zahod–vzhod, izstopajoče Cerkniško jezero in gozdni pas od Trnovskega gozda proti vzhodu. V istem atlasu je bilo tudi več drugih zemljevidov slovenskega ozemlja, na primer Koroška in Štajerska, ki sta bili povzeti po Laziusovih zemljevidih.

under the title ***Nova discrittione della Dalmatia et Crovatia*** (A New Description of Dalmatia and Croatia). The map shows part of today's Slovenia, Istria, part of Dalmatia, Slavonia, and part of Bosnia (Slovenci … 1986; Marković 1993).

The Venetian Bolognino Zaltieri (a.k.a. Bolognius Zalterius; second half of the sixteenth century) produced the map ***Ducatus Carniolae una cum Marchia Windorum*** (The Duchy of Carniola with the Windic March) in 1569 (Figure 15; Orožen 1901), using Lazius's map of Carniola as a model (Marković 1993).

In 1570, Abraham Ortelius included the map ***Schlavoniae, Croatiae, Carniae, Istriae, Bosniae, finitimarumque regionum nova descriptio*** (A New Depiction of Slavonia, Croatia, Carniola, Istria, Bosnia, and Neighboring Regions; Figure 16) in his first edition of the atlas *Theatrum Orbis Terrarum* (Theater of the World). This was a reduced-scale adaptation of Hirschvogel's map of Hungary (Kratochwill 1986), which Ortelius included in his atlas. The map shows the territory between Lake Ossiach and the central Danube Valley at the top and the area between the Adriatic, Sarajevo, and Višegrad at the bottom. The Adriatic coast and islands still look very much the same as on Ptolemy's maps, but the interior is already depicted more accurately. In 1573, the third edition of his atlas also included adaptations of Coppo's map of Istria and Lazius's maps *Carinthiae ducatus, et Goritiae palatinatus* (The Duchy of Carinthia and the County of Gorizia) and *Goritiae, Karstii, Chaczeolae, Carniolae, Histriae, et Windorum marchae descript* (A Description of Gorizia, Karst, the Kočevje Area, Carniola, Istria, and the Windic March; Slovenci … 1986).

In 1572, the map ***Illyricum*** (Illyria; Figure 17) was created by the Hungarian Ioanes Sambucus (a.k.a. János Zsámboki, 1531–1584), who is primarily known as a map collector (Török 2007). This was a revised version of Hirschvogel's map of Hungary, which Ortelius included in the second edition of his atlas in 1573. Part of the map (e.g., the one showing Istria and the Kvarner Gulf) is very precise, but other parts (e.g., the rest of the Adriatic coast and the interior) are less accurate (Bohinec 1969; Lago and Rossit 1981; Kozličić 1995).

In 1589, Gerardus Mercator published the map ***Forum Iulium, Karstia, Carniola, Histria et Windorum Marchia*** (Friuli, Karst, Carniola, Istria, and the Windic March; Figure 18), which served as the basis for many later maps (Marković 1993). Mercator borrowed the information for what is now Slovenian territory from Ortelius, who took it from Lazius's maps, which is why the map contains many errors (Shaw and Čuk 2015).

The map ***Carniolae Chaziolae Q3 Ducatus nec non et Goritiae Comitatus*** … (The Duchy of Carniola and the Kočevje Area, as Well as the County of Gorizia …) was published in 1593 in the atlas *Speculum Orbis Terrae* (Mirror of the World;

3.2.2 Sedemnajsto stoletje

To je obdobje, ko se poleg tujih uveljavijo tudi domači kartografi. Nastane nekaj natančnih zemljevidov, na slovenskem ozemlju pa se uveljavijo takratne evropske kartografske smeri.

Od 17. stoletja se postopno povečuje kakovost kartografskega prikaza. Kljub temu so zemljevidi slovenskega ozemlja v številnih pogledih še večinoma nenatančni in izdelani površno. Vzroke lahko iščemo v obrobni legi in nepoznavanju ozemlja, a se slednje z uveljavljanjem domačih avtorjev zmanjšuje.

Leta 1612 je nastal zemljevid ***Archiducatus Carinthiae fertilissimi Carantania olim et Carnia, dicti, ex diligenti omnium Locorum Perlustratione et Dimensione, nova, vera, et Exactissima Geographia*** (Najbolj natančen geografski oris, z novim pregledom in meritvijo vseh krajev najbolj rodovitne vojvodine Koroške, nekoč Karantanije in Kranjske) Israela Holzwurma (1575/1580–1617). Leta 1616 so zemljevid ponovno izdali (prvi velja za izgubljenega), a v dvakrat manjšem merilu (Höck in Leitner 1984).

Zemljevid ***Istria olim Iapidia*** (Istra, nekdanja Japidija) je leta 1620 (slika 20) izdal Giovanni Antonio Magini (1555–1617), ki je deloval v Bologni. Južni del Istre je obrnjen tako, da polotok leži v smeri zahod–vzhod in ne sever–jug (Lago in Rosit 1981; Kladnik, Pipan in Gašperič 2014). Zemljevid je kasneje doživel še nekaj različnih izdaj v Blaeuovih atlasih.

Od leta 1635 je Nizozemec Willem Janszoon Blaeu (tudi Guilielmus Janssonius) s sinovoma Joanom (tudi Johannes, okoli 1599–1673) in Corneliusom izdajal atlase *Theatrum Orbis Terrarum, sive Atlas Novus* (Gledališče sveta ali Novi atlas) (French 1999). Slovensko ozemlje je bilo tako kot druga območja prirejeno po delih Mercatorja. Znan je prikaz slovenskega ozemlja z naslovom ***Karstia, Carniola, Histria et Windorum Marchia*** (Kras, Kranjska, Istra in Slovenska marka), ki je bil okrog leta 1666 natisnjen z isto ploščo in spremenjenim naslovom ***Carniola, Cilia comitatus, et Windorum Marchia*** (Kranjska, Celjska grofija in Slovenska marka) (slika 22).

Leta 1657 je Francoz Nicolas Sanson (1600–1667) izdelal zemljevid z nemškim in francoskim naslovom ***Hertzogthūber Steyer, Karnten, Krain, & c./Duchés de Stirie, Carinthie, Carniole*** … (Vojvodine Štajerska, Koroška in Kranjska …). V smeri sever–jug prikazuje območje med Zgornjo Štajersko in Istro, v smeri zahod–vzhod pa območje med reko Piavo in Blatnim jezerom (slika 21). Pri prikazu slovenskega ozemlja je viden vpliv Laziusovih zemljevidov (Bohinec 1969; Slovenci … 1986).

Leta 1678 je bil natisnjen zemljevid ***Styriae Ducatus Fertilissimi Nova Geographica Descriptio*** (Novi geografski opis nadvse rodovitne vojvodine Štajerske) Georga Matthäusa Vischerja (1628–1696). Zemljevid meri približno 123 × 135 cm

Figure 19). It is an adaptation of Lazius's maps from the collection depicting Austrian provinces from 1561. It was made by the Flemish cartographer Gerard de Jode (1509–1591) and was published posthumously by his son Cornelis (1568–1600) in the atlas mentioned above (Collection … 2020a). Its special features include a west–east orientation, a rather prominently depicted Lake Cerknica, and a forest belt extending from the Trnovski gozd Plateau toward the east. The same atlas also contained several other maps of Slovenian territory, such as the maps of Carinthia and Styria, which were based on Lazius's originals.

3.2.2 Seventeenth Century

This is the period in which local cartographers also became prominent in addition to others. Several detailed maps were created, and the European mapping trends of the time also became established in Slovenian territory.

From the seventeenth century onward, the quality of maps gradually increased. Nonetheless, in many aspects the maps of Slovenian territory continued to be inaccurate and superficially made. The reasons for this may be the area's marginal location and a lack of familiarity with it. However, the latter improved with the gradual increase in importance of local cartographers.

In 1612, Israel Holzwurm (1575/1580–1617) produced the map ***Archiducatus Carinthiae fertilissimi Carantania olim et Carnia, dicti, ex diligenti omnium Locorum Perlustratione et Dimensione, nova, vera, et Exactissima Geographia*** (The Most Exact Geographical Outline, with a New Overview and Measurements of all Places of the Most Fruitful Duchy of Carinthia, Former Carantania, and Carniola). It was reissued in 1616 (the original is considered lost), but at half the scale (Höck and Leitner 1984).

The map ***Istria olim Iapidia*** (Istria, the Former Land of the Iapydes) was published in 1620 (Figure 20) by the Bologna-based Giovanni Antonio Magini (1555–1617). The southern part of Istria is turned such that the peninsula lies in a west–east rather than north–south direction (Lago and Rosit 1981; Kladnik, Pipan, and Gašperič 2014). Various versions of the map were later published in the Blaeu atlases.

From 1635 onward, the Dutch cartographer Willem Janszoon Blaeu (a.k.a. Guilielmus Janssonius) and his sons Joan (a.k.a. Johannes, c. 1599–1673) and Cornelius published *Theatrum Orbis Terrarum, sive Atlas Novus* (Theater of the World or New Atlas; French 1999). Like with other areas, depictions of Slovenian territory were adapted from Mercator's maps. Well-known is the map of Slovenian territory titled ***Karstia, Carniola, Histria et Windorum Marchia*** (Karst, Carniola, Istria, and the Windic March), which was reprinted in 1666 using the same plate, but a different title: ***Carniola, Cilia***

in ima za tisti čas veliko merilo (med 1 : 160.000 in 1 : 173.000) (slika 23). Zelo podrobno prikazuje ozemlje Štajerske, zaznamujejo pa ga tudi bogate ilustracije in besedila, ki zapolnjujejo robne prostore (slike 24–26). Lep primer je upodobitev zmage habsburške vojske nad turško leta 1664 pri Monoštru, ki jo upodablja boj nadangela Mihaela z zmajem ali številni merilni inštrumenti, ki jih je avtor uporabljal za izdelavo zemljevida (Stopar 2006).

Zemljevid ***Ducatus Carintiae et Carniolae Cilleiae Comitatus*** (Vojvodina Koroška in Kranjska, grofija Celjska) je delo Nizozemca Fredericka de Witta (1629/1630–1706) (Collection … 2020b). Izdan je bil konec 17. stoletja na podlagi Sansonovega zemljevida. Različni barvni odtenki posameznih območij ter bogata kartuša z deželnimi grbi naredijo na bralca zemljevida močan vtis (slika 27).

Leta 1686 je Giacomo Cantelli da Vignolla (1643–1695) iz Ferrare izdelal zemljevid ***Li Ducati di Stiria, Carintia e Carniola et altri Stati Ereditary che compongono parte del Circolo d' Austria*** (Vojvodine Štajerska, Koroška in Kranjska ter druge dedne dežele, ki sestavljajo del območja Avstrije) (Collection … 2020d). Zemljevid prikazuje večji del ozemlja današnje Slovenije, zahodni rob Italije, Istro in zahodni del Hrvaške s Primorjem. Zanimivost je prikaz z gozdom poraščenega območja Cerkniškega jezera ter kartuša, ki ponazarja beneško-turške vojne.

Leta 1689 je izšlo delo *Die Ehre deß Hertzogthums Crain* (Slava vojvodine Kranjske) Kranjca Janeza Vajkarda Valvasorja (1641–1693). V drugi knjigi je objavljen zemljevid ***Carniolia, Karstia, Histria et Windorum Marchia*** (Kranjska, Kras, Istra in Slovenska marka) (Valvasor 2009) (slika 28). Nekoliko predelan zemljevid je Valvasor leta 1681 izdelal tudi za zgodovinsko delo *Carniolia antiqua et nova* (Stara in nova Kranjska) Janeza Ludvika Schönlebna (1618–1681) (Schönleben 1681). Kot podlaga Valvasorjevemu zemljevidu je gotovo služil zemljevid Matthäusa Meriana (1593–1650), ki pa je bil kopija Mercatorjevega zemljevida tega območja. Valvasor je izboljšal zlasti upodobitev rečne mreže ter velikost Cerkniškega jezera, slabša pa je upodobitev Istre (Rojc 1990; Longyka 1999).

3.2.3 Osemnajsto stoletje

Zemljevid ***Ducatus Carnioliae Tabula*** (Zemljevid vojvodine Kranjske) (slika 29) je Johann van der Bruggen (1695–1740) izdal v začetku 18. stoletja. Domnevno sta ga v bakrene plošče vrezala Nemca Johann Andreas Pfeffel (1674–1750) in Christian Engelbrecht (1672–1735), katerih inicialke so navedene pod spodnjim desnim robom zemljevida (Collection … 2020c).

V tem obdobju je Nemec Christoph Weigel starejši (1654–1725) izdal manjši zemljevid ***Ducatus Carnioliae accuratissima delineatio*** (Nadvse natančen prikaz vojvodine Kranjske)

comitatus, et Windorum Marchia (Carniola, the County of Celje, and the Windic March; Figure 22).

In 1657, the French cartographer Nicolas Sanson (1600–1667) produced a map with the following German and French title: ***Hertzogthūber Steyer, Karnten, Krain, & c. / Duchés de Stirie, Carinthie, Carniole*** … (The Duchies of Styria, Carinthia, and Carniola …). It portrayed the area between Upper Styria and Istria from north to south, and the area between the Piave River and Lake Balaton from west to east (Figure 21). The depiction of Slovenian territory was clearly influenced by Lazius's maps (Bohinec 1969; Slovenci … 1986).

In 1678, Georg Matthäus Vischer (1628–1696) printed the map ***Styriae Ducatus Fertilissimi Nova Geographica Descriptio*** (A New Geographical Description of the Most Fertile Duchy of Styria). It measured approximately 123 × 135 cm and used a scale between 1:160,000 and 1:173,000, which was a fairly large scale for that time (Figure 23). The map presents Styria in detail and contains rich illustrations and text on the sides (Figures 24–26). A good example of this is a depiction of the 1664 victory of the Habsburgs over the Ottomans in the Battle of Saint Gotthard (*Szentgotthárd*), represented by Archangel Michael fighting the dragon, or illustrations of instruments that Vischer used to create the map (Stopar 2006).

The Dutch cartographer Frederick de Witt (1629/1630–1706) produced the map ***Ducatus Carintiae et Carniolae Cilleiae Comitatus*** (The Duchy of Carinthia and Carniola, the County of Celje; Collection … 2020b). It was published at the end of the seventeenth century based on Sanson's map. Various colors used to outline individual areas and a cartouche with provincial coats of arms make a strong impression on the user (Figure 27).

In 1686, Giacomo Cantelli da Vignolla (1643–1695), an Italian cartographer from Ferrara, produced the map ***Li Ducati di Stiria, Carintia e Carniola et altri Stati Ereditary che compongono parte del Circolo d' Austria*** (The Duchies of Styria, Carinthia, and Carniola, and Other Hereditary Lands That Make Up Part of Austria; Collection … 2020d). It shows a large portion of what is now Slovenia, the western edges of Italy, Istria, and western Croatia with the coast. Among the more interesting elements are the depiction of the forested area of Lake Cerknica and a cartouche depicting the Venetian–Ottoman wars.

In 1689, the Carniolan polymath Johann Weikhard von Valvasor (1641–1693) published *Die Ehre deß Hertzogthums Crain* (The Glory of the Duchy of Carniola). Book 2 of this encyclopedia contains the map ***Carniolia, Karstia, Histria et Windorum Marchia*** (Carniola, Karst, Istria, and the Windic March; Valvasor 2009; Figure 28), which is a slightly modified version of the map that Valvasor produced in 1681 for the historical

(Götzfried … 2019a). Zemljevid je avtor povzel po Valvasorju, kar je navedeno v kartuši, v zgornjem desnem kotu pa so motivi iz Slave vojvodine Kranjske, vključno s Predjamskim gradom in poosebljeno vojvodino Kranjsko. Na podoben način je Weigel izdelal tudi zemljevida Štajerske in Koroške.

Nemec Johann Baptist Homann (1664–1724) je v letih 1714–1724 izdajal zemljevid ***Tabula Ducatus Carnioliae, Vindorum Marchiae et Histriae*** (Zemljevid vojvodine Kranjske, Slovenske marke in Istre) (slika 30) (Korošec 1978; Lago 1996). Prikaz Kranjske je bolj kakovosten, saj je avtor črpal podatke iz Valvasorjeve Slave vojvodine Kranjske (na primer Cerkniško jezero, veduta Ljubljane, podobe v kartuši) in ne toliko iz njegovih kartografskih del. Zaradi številnih poznejših ponatisov zlasti Seutterja in Lotterja gre za bolj prepoznavne zemljevide 18. stoletja.

V istem obdobju je Homann izdelal več zemljevidov, ki delno prikazujejo slovensko ozemlje. Zemljevid ***Ducatus Stiriae Novissima Tabula*** (Najnovejši zemljevid vojvodine Štajerske) (slika 31) je pomanjšana priredba Vischerjevega dela, ki zajema slovenski del Štajerske in del Koroške, katero je prikazal tudi na zemljevidu ***Nova et accurata Carinthiae Ducatus Tabula geographica*** (Nov in natančen geografski zemljevid vojvodine Koroške) (slika 32). Homannove zemljevide sta pozneje v dopolnjeni obliki izdajala tudi Nemca Matthias Seutter (1678–1757) in njegov zet Tobiasa Conrad Lotter (1717–1777) (Slovenci … 1986).

Zaradi gospodarskih potreb so nastajali tudi prikazi manjših območij, največkrat v obliki zelo podrobnih in slikovitih **tematskih zemljevidov**. Lep primer je cestni zemljevid s prikazom Notranjske, ki ga je leta 1720 izdal upravnik Idrijskega rudnika Franc Anton Steinberg (1684–1765).

Med največje kartografske dosežke 18. stoletja uvrščamo zemljevid ***Ducatus Carnioliae tabula chorographica*** (Horografski zemljevid vojvodine Kranjske), ki ga je leta 1744 izdal Janez Dizma Florjančič pl. Grienfeld (1691–pred 1757). Velikost celotnega zemljevida je približno 180 × 188 cm, merilo pa približno 1 : 100.000 (slika 33). Gre za v tem obdobju najkakovostnejši in najpopolnejši zemljevid Kranjske. Zemljevid na zahodu prikazuje območje do Gorice in Gradišča ob Soči, na vzhodu do Žalca, Brežic in Karlovca, na severu do Trbiža, Železne Kaple in Slovenj Gradca ter na jugu do Rovinja in Crikvenice (Reisp 1995). Posebnost zemljevida sta veduta in načrt Ljubljane (slika 36) ter številni slikovni dodatki, s katerimi so upodobljene deželne posebnosti (Reisp 1995).

Leta 1752 sta Francoza Gilles Robert de Vaugondy (1688–1766) in/ali sin Gilles Robert de Vaugondy (okoli 1723–1786) izdala zemljevid ***Partie Méridionale du Cercle d'Autriche, qui comprend La Basse Partie du Duché de Stirie, Le Duché de Carinthie, divisé en haute et basse, Le Duché de Carniole, divise en haute, basse, moyenne et inter.e Carniole, et l'Istrie*** volume *Carniolia antiqua et nova* (Carniola, Old and New) by Johann Ludwig Schönleben (1618–1681; Schönleben 1681). It was most likely based on the map by Matthäus Merian (1593–1650), which in turn was a copy of Mercator's map of the area. Valvasor improved the depiction of the river network and the size of Lake Cerknica in particular, but his depiction of Istria was a step backward (Rojc 1990; Longyka 1999).

3.2.3 Eighteenth century

Johann van der Bruggen (1695–1740) published ***Ducatus Carnioliae Tabula*** (Map of the Duchy of Carniola; Figure 29) in the early eighteenth century. It was presumably engraved on copper plates by the Germans Johann Andreas Pfeffel (1674–1750) and Christian Engelbrecht (1672–1735), whose initials are provided under the lower right edge of the map (Collection … 2020c).

During that time, the German Christoph Weigel Sr. (1654–1725) published a smaller map titled ***Ducatus Carnioliae accuratissima delineatio*** (The Most Accurate Outline of the Duchy of Carniola; Götzfried … 2019a). It was based on Valvasor's map, which is indicated in the cartouche, and the upper right part of the map features motifs from Valvasor's *The Glory of the Duchy of Carniola*, including Predjama Castle and the personified Duchy of Carniola. Weigel also produced maps of Styria and Carinthia in a similar way.

The German cartographer Johann Baptist Homann (1664–1724) published ***Tabula Ducatus Carnioliae, Vindorum Marchiae et Histriae*** (Map of the Duchy of Carniola, the Windic March, and Istria; Figure 30) from 1714 to 1724 (Korošec 1978; Lago 1996). His depiction of Carniola was of higher quality because he drew information from Valvasor's *The Glory of the Duchy of Carniola* (e.g., Lake Cerknica, the panorama of Ljubljana, and illustrations in the cartouche) rather than his maps. Because of numerous later reprints, especially by Seutter and Lotter, this is a better-known eighteenth-century map.

During the same time, Homann produced several maps that depict parts of Slovenian territory. ***Ducatus Stiriae Novissima Tabula*** (The Latest Map of the Duchy of Styria; Figure 31) is a reduced-scale adaptation of Vischer's map covering the Slovenian part of Styria and part of Carinthia, which he also depicted on the map ***Nova et accurata Carinthiae Ducatus Tabula geographica*** (A New and Accurate Geographical Map of the Duchy of Carinthia; Figure 32). Homann's maps were later also published in revised form by the German map publisher Matthias Seutter (1678–1757) and his son-in-law Tobias Conrad Lotter (1717–1777; Slovenci … 1986).

For commercial purposes, maps were also created of smaller areas, usually in the form of highly detailed and picturesque **thematic maps**. A good example is the road map depicting

Impériale (Južni del Avstrije, ki obsega spodnji del vojvodine Štajerske, vojvodino Koroško, ki se deli na zgornjo in spodnjo, vojvodino Kranjsko, razdeljeno v zgornjo, spodnjo, srednjo in notranjo Kranjsko, ter cesarstvo Istre) (slika 39). Zemljevid prikazuje južne dele takratne Habsburške monarhije. Nekatera območja (na primer Kras in Dalmacija) so prikazana bolj točno kot na drugih zemljevidih tistega časa (Lago 1996).

Okrog leta 1760 je izšel *Atlas Novus sive Tabulae Geographicae Totius Orbis Faciem, Partes, Imperia, Regna et Provincias* (Novi atlas geografskih zemljevidov vsega obličja sveta, njegovih delov, imperijev, kraljestev in provinc), kjer je objavljen Lotterjev zemljevid ***Exactissima Ducatus Carnioliae, Vindorum Marchiae et Histriae delineatiocura*** (Nadvse natančni oris vojvodine Kranjske, Slovenske marke in Istre). Gre za priredbo Homannovega zemljevida Kranjske. Zemljevidi v atlasu so površni in niso posebno kartografsko kakovostni (Orožen 1901).

Med letoma 1763 in 1787 je bila izvedena prva sistematična vojaška kartografska izmera Habsburške monarhije ***Josephinische Landesaufnahme*** (jožefinska deželna izmera) (slika 40) (Rajšp 1996; Zorn 2007). Zemljevidi še nimajo točne geodetske podlage, a jih zaradi velikega merila (1 : 28.800), natančnosti izdelave in številčnosti podatkov uvrščamo med najboljša kartografska dela druge polovice 18. stoletja (Gašperič 2010). Izdelani so ročno, posamezen zemljevid pa meri 64 × 42 cm. Bili so strogo varovan vojaški dokument, ki ni bil dostopen širši javnosti (Rajšp 1994). V novejšem času so bili za slovensko ozemlje izdani v sedmih knjigah (Rajšp in Ficko 1995; 1996; Rajšp in Trpin 1997; Rajšp in Serše 1998; 2001; Rajšp in Grabnar 1999; Rajšp in Kološa 2000).

Baltazar Hacquet (1739/1740–1815) je napisal delo *Oryctographia Carniolica oder Physikalische Erdbeschreibung des Herzogthums Krain, Istrien und zum Theil der benachbarten Länder* (Oriktografija Kranjske ali fizikalni zemljepis vojvodine Kranjske, Istre in dela sosednjih dežel), ki je izšlo v štirih delih (1778–1789). V prvem zvezku je objavljen tudi zemljevid z naslovom ***Mappa Litho-Hydrographica Nationis Slavicae*** (Litološko-hidrografski zemljevid slovanskih narodov) (slika 41). Zemljevid je podolgovate oblike in prikazuje območje med porečjema Save in Drave. Posebnost so označena rudna nahajališča. Krajevna imena so pretežno slovenska ali dvojezična (Wawrik in Zeilinger 1989).

Hacquet je leta 1778 sodeloval pri izdelavi zemljevida Franca Barage z opisnim naslovom ***Krainska deschela*** (Kranjska) (slika 42). Kartografsko je zastarel, njegova odlika pa so označena nahajališča rudnin ter slovenski toponimi. Hacquetovi zemljevidi so prvi **tematski geološki zemljevidi** na Slovenskem (Longyka 1999).

V letih 1788 in 1791 sta izšla prvi in drugi del zgodovinskega dela *Versuch einer Geschichte von Krain und der übrigen südlichen Slaven Oesterreichs* (Poskus zgodovine Kranjske in Inner Carniola, which was published in 1720 by the manager of the Idrija Mine, Franz Anton von Steinberg (1684–1765).

The greatest cartographic achievements of the eighteenth century include the ***Ducatus Carnioliae tabula chorographica*** (Chorographic Map of the Duchy of Carniola) published in 1744 by Joannes Disma Floriantschitsch de Grienfeld (born 1691, died before 1757). The map measures approximately 180 × 188 cm at a scale of approximately 1:100,000 (Figure 33). This was the highest-quality and most complete map of Carniola at the time, depicting the area extending to Gorizia and Gradisca d'Isonzo in the west, to Žalec, Brežice, and Karlovac in the east, to Tarvisio, Eisenkappel, and Slovenj Gradec in the north, and to Rovinj and Crikvenica in the south (Reisp 1995). A special feature is the inset showing the panorama and layout of Ljubljana (Figure 36), and various illustrations depicting interesting provincial features (Reisp 1995).

In 1752, the French cartographers Gilles Robert de Vaugondy (1688–1766) and/or his son Gilles Robert de Vaugondy (c. 1723–1786) published the map ***Partie Méridionale du Cercle d'Autriche, qui comprend La Basse Partie du Duché de Stirie, Le Duché de Carinthie, divisé en haute et basse, Le Duché de Carniole, divise en haute, basse, moyenne et inter.^{e} Carniole, et l'Istrie Impériale*** (The Southern Part of Austria, Encompassing the Lower Part of the Duchy of Styria, the Duchy of Carinthia Divided into Upper and Lower Carinthia, the Duchy of Carniola Divided into Upper, Lower, Central, and Inner Carniola, and Imperial Istria; Figure 39), showing the southern parts of the Habsburg Monarchy at that time. Some areas, such as the Kras (Karst) Plateau and Dalmatia, are depicted more accurately than on other maps of that time (Lago 1996).

Around 1760, *Atlas Novus sive Tabulae Geographicae Totius Orbis Faciem, Partes, Imperia, Regna et Provincias* (New Atlas of Geographical Maps of the Entire Face of the World, Its Parts, Empires, Kingdoms, and Provinces) was published. It also contained Lotter's map ***Exactissima Ducatus Carnioliae, Vindorum Marchiae et Histriae delineatiocura*** (The Most Exact Outline of the Duchy of Carniola, the Windic March, and Istria), which was an adaptation of Homann's map of Carniola. The maps in this atlas are inaccurate and do not display any significant cartographic quality (Orožen 1901).

Between 1763 and 1787, the first systematic military land survey and mapping of the Habsburg Monarchy, known in German as ***Josephinische Landesaufnahme*** (the Josephinian Land Survey; Figure 40), was conducted (Rajšp 1996; Zorn 2007). The maps do not yet have an accurate surveying basis, but their large scale (1:28,800) and accuracy, and the large quantity of information they provide rank them among the best maps of the second half of the eighteenth century (Gašperič 2010). They were handmade, each measuring 64 × 42 cm, and were considered highly confidential military

ostalih dežel južnih Slovanov Avstrije) Antona Tomaža Linharta (1756–1795). Njegovemu delu so bili dodani štirje zemljevidi. Zemljevida, ki prikazujeta podobno območje v različnih zgodovinskih obdobjih, sta ***Tabula Antiqua regionis inter Dravum Fluvium et Mare Adriaticum*** (Antični zemljevid ozemlja med reko Dravo in Jadranskim morjem) v prvem delu in ***Conspectus Karantaniae sive Slavorum meridionalium ante Caroli M. imperium*** (Zemljevid Karantanije ali južnih Slovanov pred cesarstvom Karla Velikega) v drugem delu (Linhart 1981). Prvi je večji, prikazan v večjem merilu in kartografsko podrobnejši.

Med letoma 1789 in 1797 so izhajali zemljevidi, ki so bili vključeni v ***Atlas von Innerösterreich - Die Provinz Inner-Oesterreich*** (Atlas notranjeavstrijskih dežel) Josepha Karla Kindermanna (1744–1801). Atlas prikazuje Štajersko, Koroško, Kranjsko (slika 43) ter Goriško z Gradiško oziroma avstrijsko Primorje. Sestavlja ga enajst zemljevidov v merilu 1 : 255.000 ter pregledni zemljevid notranjeavstrijskih dežel v merilu 1 : 600.000. Med drugim je označena jezikovna meja med Slovenci in Nemci na Koroškem in Štajerskem (Korošec 1978; Wawrik in Zeilinger 1989).

Kindermann je izdeloval tudi zemljevide za poznejši *Atlas des Österreichischen Kaiserthums/Atlas De L'Empire Autrichien* (Atlas avstrijskega cesarstva), ki je izšel leta 1805 (Dörflinger 1986). V njem je njegov zemljevid z nemškim in francoskim naslovom ***Charte von Kaernthen und Krain, nebst den Grafschaften Görz und Gradiska und dem Gebiethe von Triest/Carte de la Carinthie et de la Carniole, avec les Comte's de Gorice et de Gradisca et le Gouvernement de Trieste*** (Zemljevid Koroške in Kranjske, skupaj z grofijo Goriško in Gradiško ter območjem Trsta) (Dörflinger in Hühnel 1995), ki je bil izdelan leta 1803 (slika 44).

Zaradi različnih infrastrukturnih projektov, na primer obnov cest (na primer Dunaj–Trst in Celovec–Ljubljana–Karlovec), regulacij rek (na primer porečje Ljubljanice od Vrhnike do izliva v Savo) in Ljubljanskega barja, so nastali številni zemljevidi, načrti in skice, ki zelo natančno prikazujejo območja, kjer so bila dela načrtovana (Korošec 1978).

3.2.4 Devetnajsto stoletje

Habsburška kartografija je v tem obdobju v samem svetovnem vrhu. Za slovensko ozemlje se pojavijo zemljevidi v slovenskem ali nemškem jeziku, nekateri pa so dvojezični (slovensko, nemško). Značilni so tudi prikazi manjših območij v velikem merilu, kot tudi zemljevidi, ki prikazujejo slovensko etnično ozemlje.

Na tem mestu izpostavljamo dve vojaški izmeri Habsburške monarhije, drugo (1806–1869) (Timár s sodelavci 2006) in tretjo (1869–1887) (Kretschmer in Messner 1986), ki sta bili podlaga številnim drugim zemljevidom. Zemljevid, ki je

documents that were not accessible to the public (Rajšp 1994). The maps covering Slovenian territory were more recently published in seven volumes (Rajšp and Ficko 1995; 1996; Rajšp and Trpin 1997; Rajšp and Serše 1998; 2001; Rajšp and Grabnar 1999; Rajšp and Kološa 2000).

Belsazar Hacquet (1739/1740–1815) authored the work *Oryctographia Carniolica oder Physikalische Erdbeschreibung des Herzogthums Krain, Istrien und zum Theil der benachbarten Länder* (Oryctography of Carniola or a Physical Geography of the Duchy of Carniola, Istria, and Parts of Neighboring Lands), which was published in four volumes (1778–1789). Volume one contains a map titled ***Mappa Litho-Hydrographica Nationis Slavicae*** (Lithological and Hydrological Map of the Slavic Nations; Figure 41). It has an oblong form and shows the area between the Sava and Drava basins. It is interesting that it also depicts the locations of ore deposits. The place names provided are mainly Slovenian or bilingual (Wawrik and Zeilinger 1989).

In 1778, Hacquet was involved in the production of Franz Xaver Baraga's map ***Krainska deschela*** (Carniola; Figure 42), which depicts the territory of Carniola. This map is outdated in terms of the mapping technique used, but one of its qualities is that it shows the locations of ore deposits and it uses Slovenian toponyms. Hacquet's maps were the first **thematic geological maps** of Slovenian territory (Longyka 1999).

In 1788 and 1791, volumes one and two of Anton Tomaž Linhart's (1756–1795) historical work *Versuch einer Geschichte von Krain und der übrigen südlichen Slaven Oesterreichs* (Essay on a History of Carniola and Other South Slavic Lands in Austria) were published. These two volumes include two maps depicting a similar area during two different historical periods: ***Tabula Antiqua regionis inter Dravum Fluvium et Mare Adriaticum*** (Ancient Map of the Region between the Drava River and the Adriatic) in volume one and ***Conspectus Karantaniae sive Slavorum meridionalium ante Caroli M. imperium*** (Map of Carantania or the South Slavs before Charlemagne's Empire) in volume two (Linhart 1981). The former is larger, more detailed, and uses a larger scale.

Joseph Karl Kindermann (1744–1801) published a series of maps from 1789 to 1797 in his ***Atlas von Innerösterreich*** – ***Die Provinz Inner-Oesterreich*** (Atlas of Inner Austria), which covered Styria, Carinthia, Carniola (Figure 43), and the County of Gorizia with Gradisca, or the Austrian Littoral. It was composed of eleven 1:255,000 scale maps and an index map of Inner Austria at a scale of 1:600,000. Among other things, the maps outline the language border between Slovenians and Germans in Carinthia and Styria (Korošec 1978; Wawrik and Zeilinger 1989).

Kindermann also produced maps for the later *Atlas des Österreichischen Kaiserthums / Atlas De L'Empire Autrichien* (Atlas

nastal kot rezultat druge izmere, se imenuje ***Franziszeische Landesaufnahme*** (Franciscejska deželna izmera). Izdelan je na podlagi trigonometrične mreže in v istem merilu kot prva izmera, 1 : 28.800. Tretja izmera se imenuje ***Franzisco-Josephinische Landesaufnahme*** (Franc-jožefinska deželna izmera), izdelana pa je v merilu 1 : 25.000, vojaška območja tudi v 1 : 12.500 (Frajer in Geletič 2011).

Zemljevid ***Topographisch-militairische Charte von Teutschland*** (Vojaškotopografski zemljevid Nemčije) je med letoma 1807 in 1814 izdajal Geografski inštitut v Weimarju. Pod vodstvom Prusa Friedricha Wilhelma Streita (1772–1839) so ga izdali na 204 listih (slika 45) v velikem merilu 1 : 180.000. Končno število listov (217) pa so izdelali po letu 1819 (Christoph 2012). Gre za prvo serijo zemljevidov takšnega merila v srednji Evropi. Vzpeti svet je prikazan z metodo črtic, zemljevid pa je pregleden in berljiv.

Leta 1812 je bil natisnjen zemljevid ***Carte des Provinces Illyriennes comprenant la Bosnie, l'Herzégovine, le Monténéro et quelques pays adjacens*** (Zemljevid Ilirskih provinc, ki obsega tudi Bosno, Hercegovino, Črno goro in nekatere sosednje dežele), katerega avtor je Francoz Gaetano Palma. Zemljevid sodi med najkakovostnejše kartografske izdelke začetka 19. stoletja (Gašperič, Orožen Adamič in Šumrada 2012).

Istega leta je bil izdelan tudi zemljevid ***Carte von Inner Oestreich. Nach den neuesten astronomischen Ortsbestimungen*** (Zemljevid Notranje Avstrije z najnovejšimi astronomskimi določitvami položaja krajev) Josepha de Castra. Zemljevid prikazuje Štajersko, Kranjsko in Istro. Sestavljen je iz šestih delov v merilu približno 1 : 290.000 (Dörflinger 1988).

Podoben Castrovemu zemljevidu, a izdelan v večjem merilu, je zemljevid ***Charte von dem Königreiche Illyrien und dem Herzogthume Steyermark*** (Zemljevid Ilirskega kraljestva in vojvodine Štajerske) (Orožen 1901). Poznana je izdaja iz leta 1818 (slika 46) Carla Ferdinanda Weilanda (1782–1847) iz Saške.

Leta 1818 se je v Habsburški monarhiji začela izmera tako imenovanega **franciscejskega katastra** (slika 47), ki je za slovensko ozemlje (z izjemo Prekmurja) trajala do leta 1828 (Slak 2019). Večji del zemljevidov je bil izdelan v merilu 1 : 2880, težje dostopni kraji v merilu 1 : 5760, območje nekaterih večjih naselij pa v merilu 1 : 1440 ali 1 : 720 (Golec 2010). Kataster ne prikazuje oblikovanosti površja, je pa zelo podroben pri prikazu zemljiških parcel in kategorij rabe zemljišč. Zaradi zemljiško-davčne reforme leta 1869 je med letoma 1869 in 1887 nastajal tako imenovani **reambulančni kataster**, ki mu je leta 1896 sledila še revizija (Petek in Urbanc 2004).

Leta 1831 je Georg Ludvig von Ritter (deloval v prvi polovici 19. stoletja) izdal zemljevid ***Neueste Specialkarte von Krain nach der dermaligen Eintheilung in Bezirke*** (Najnovejši

of the Austrian Empire), published in 1805 (Dörflinger 1986). One of the maps that was included in this atlas and had a German-French title was his ***Charte von Kaernthen und Krain, nebst den Grafschaften Görz und Gradiska und dem Gebiethe von Triest / Carte de la Carinthie et de la Carniole, avec les Comte's de Gorice et de Gradisca et le Gouvernement de Trieste*** (Map of Carinthia and Carniola, Together with the Counties of Gorizia and Gradisca, and the Trieste Area; Dörflinger and Hühnel 1995) created in 1803 (Figure 44).

Because of various infrastructure projects, such as renovations of roads (e.g., the road from Vienna to Trieste and the road from Klagenfurt to Karlovac via Ljubljana) and regulations of rivers (e.g., the Ljubljanica basin from Vrhnika to the river's discharge into the Sava) and the Ljubljana Marsh, many maps, plans, and sketches were produced, providing a highly accurate representation of the areas of the works planned (Korošec 1978).

3.2.4 Nineteenth Century

The Habsburg Monarchy was at the vanguard of global cartography during this period. Maps of Slovenian territory began to appear in Slovenian or German, and some were also bilingual (Slovenian and German). Both large-scale depictions of smaller areas and maps of the entire Slovenian ethnic territory were typical in this period.

In this regard, two military surveys of the Habsburg Monarchy can be highlighted: the second survey conducted between 1806 and 1869 (Timár et al. 2006) and the third survey conducted between 1869 and 1887 (Kretschmer and Messner 1986), which served as the basis for many other maps. The maps produced as part of the second survey, known in German as ***Franziszeische Landesaufnahme*** (the Franciscan Land Survey), were based on a triangulation network and used the same 1:28,800 scale as the first survey. The third survey was called ***Franzisco-Josephinische Landesaufnahme*** (the Franciscan-Josephinian Land Survey), in which maps were produced at a 1:25,000 scale, with military areas also mapped at a 1:12,500 scale (Frajer and Geletič 2011).

The map ***Topographisch-militairische Charte von Teutschland*** (Topographic-Military Map of Germany) was published by the Weimar Geographical Institute from 1807 to 1814. Under the leadership of the Prussian cartographer Friedrich Wilhelm Streit (1772–1839), the map was published on 204 sheets (Figure 45) at a scale of 1:180,000. The final number of sheets (217) was created and published after 1819 (Christoph 2012). This was the first series of maps depicting central Europe at this scale. Elevations are marked with hachures, and the map itself is clear and easy to read.

In 1812, the map ***Carte des Provinces Illyriennes comprenant la Bosnie, l'Herzégovine, le Monténéro et quelques pays***

specialni zemljevid Kranjske s tedanjimi okrožji) v merilu približno 1 : 270.000 (Dörflinger in Neunteufl 1986). Kakovostni kartografski prikaz omogoča preprosto berljivost zemljevida (Korošec 1978).

Leta 1832 je prvič izšel zemljevid ***Karte vom Herzogthume Krain*** (Zemljevid vojvodine Kranjske) (slika 48) Gottfrieda Loschana (prva polovica 19. stoletja) v merilu približno 1 : 270.000 (Dörflinger in Neunteufl 1986). To je prvi zemljevid, ki je dosledno nastal na podlagi tedanjih vojaških zemljevidov (Korošec 1978). Izdelan je v kakovostni črno-beli tehniki ter zelo berljiv. Za kraje uporablja le nemško poimenovanje. Leta 1844 je zemljevid izšel z enakim naslovom, vendar izboljšan in razširjen na območje celotnega Ilirskega kraljestva (Longyka 1999).

Zemljevid *(Special)* ***Karte des Königreichs Illyrien und des Herzogthums Steyermark nebst dem Königlich Ungarischen Littorale*** (Zemljevid Kraljevine Ilirije in vojvodine Štajerske skupaj s Primorjem kraljevine Ogrske) je leta 1834 izdal Avstrijski štab glavnega kvartirnega mojstra na Dunaju. Izdelan je v merilu 1 : 144.000 in je nastal na podlagi druge vojaške izmere. Sestavljen je iz 36 listov (slika 49) velikosti približno 27,5 × 40 cm in preglednega zemljevida (von Witzleben 1850). Zemljevid je izdelan s kamnotiskom v črno-beli tehniki. Leta 1842 je bil ponovno izdan.

Zemljevid ***General-Karte des Königreichs Illyrien nebst dem Königlich Ungarischen Littorale*** (Splošni zemljevid Kraljevine Ilirije skupaj s Primorjem kraljevine Ogrske) (slika 50) je leta 1843 izdal Vojaški geografski inštitut na Dunaju. Izdan je na štirih listih v merilu 1 : 288.000 (von Witzleben 1850). Njegova odlika je velika gostota krajevnih imen, ki pa ne zmanjša berljivosti zemljevida, ter meje posameznih delov ozemlja.

Med letoma 1844 in 1846 je izšlo 16 listov ***Special-Karte des Herzogthums Krain*** (Specialni zemljevid vojvodine Kranjske) (slika 51) Henrika Freyerja (1802–1866). Merilo zemljevida, ki ima za podlago drugo vojaško kartografsko izmero, je 1 : 113.500. Natisnjen je bil v petbarvnem kamnotisku, takrat novi tehniki. Odlika zemljevida je bogastvo slovenskih krajevnih imen (slika 4). Označena so nahajališča rudnin in rudarskih objektov (Orožen 1901; Leban 1954; Longyka 1999).

Leta 1852 (a z letnico 1853) je bil natisnjen **Zemljovid slovenske dežele in pokrajin** Petra Kozlerja (1824–1879) (slika 52). Zemljevid prikazuje območja Kranjske, Koroške, avstrijskega Primorja, Štajersko do Gradca, Prekmurje, Beneško Slovenijo in del Hrvaške. Predstavlja prvi zemljevid slovenskega etničnega ozemlja, kjer so imena krajev napisana izključno v slovenskem jeziku. Zaradi političnih zapletov z objavo je zemljevid v javnost prvič prišel šele leta 1861. Zemljevid je doživel številne ponatise. Najpomembnejši dodatek, ki je bil načrtovan že za leto 1853, dodan pa pri drugi izdaji leta 1864, je bil *Imenik mest, tergov in krajev*. Imenik je dolga leta

adjacens (Map of the Illyrian Provinces, Encompassing Bosnia, Herzegovina, Montenegro, and Certain Neighboring Lands) by the Frenchman Gaetano Palma was printed. It is considered one of the highest-quality maps of the early nineteenth century (Gašperič, Orožen Adamič, and Šumrada 2012).

That same year, Joseph de Castro produced the map ***Carte von Inner Oestreich. Nach den neuesten astronomischen Ortsbestimungen*** (Map of Inner Austria Based on the Latest Astronomical Positioning) depicting Styria, Carniola, and Istria. It is composed of six parts at a scale of approximately 1:290,000 (Dörflinger 1988).

The map ***Charte von dem Königreiche Illyrien und dem Herzogthume Steyermark*** (Map of the Kingdom of Illyria and the Duchy of Styria) was similar to that by Castro, but it used a larger scale (Orožen 1901). A known edition is the one created in 1818 (Figure 46) by the Saxon cartographer Carl Ferdinand Weiland (1782–1847).

In 1818, the **cadastral survey under Emperor Francis I** (Figure 47) began in the Habsburg Monarchy, which lasted until 1828 in Slovenian territory (except for Prekmurje; Slak 2019). Most maps were produced at a scale of 1:2,880, remote areas were mapped at a 1:5,760 scale, and certain larger settlements were mapped at a scale of 1:1,440 or 1:720 (Golec 2010). The cadaster does not show the terrain, but it depicts the plots and land use categories in great detail. Due to the 1869 land-tax reform, a **revised cadaster** was produced between 1869 and 1887, which was followed by a further revision in 1896 (Petek and Urbanc 2004).

In 1831, Georg Ludvig von Ritter (active in the first half of the nineteenth century) published the map ***Neueste Specialkarte von Krain nach der dermaligen Eintheilung in Bezirke*** (The Latest Detailed Map of Carniola with Its Current Districts) at a scale of approximately 1:270,000 (Dörflinger and Neunteufl 1986). It is a high-quality cartographic work, easy to read (Korošec 1978).

In 1832, the first edition of ***Karte vom Herzogthume Krain*** (Map of the Duchy of Carniola; Figure 48) by Gottfried Loschan (the first half of the nineteenth century) at a scale of approximately 1:270,000 was published (Dörflinger and Neunteufl 1986). This was the first map produced exclusively based on contemporary military maps (Korošec 1978). It is high-quality, produced in black-and-white, and very easy to read. The place names are only provided in German. In 1844, an improved version of the map expanded to include the entire Kingdom of Illyria was published under the same title (Longyka 1999).

(Special) ***Karte des Königreichs Illyrien und des Herzogthums Steyermark nebst dem Königlich Ungarischen Littorale*** (Map of the Kingdom of Illyria and the Duchy of Styria with the Hungarian Littoral) was published in 1834 by the Austrian

predstavljal edini seznam krajev za celotno slovensko etnično ozemlje.

Leta 1856 je izšel zemljevid ***General-Karte des Oesterreichischen Kaiserstaates mit einem grossen Theile der angrenzenden Länder*** (Splošni zemljevid avstrijske cesarske države z večjim delom sosednjih dežel). Avtor zemljevida je Joseph von Scheda (1815–1888), takrat načelnik Vojaško geografskega inštituta na Dunaju. Zemljevid sestavlja dvajset listov v merilu 1 : 576.000. Kartografsko je zelo kakovosten, preglednost pa omejuje gostota zemljepisnih imen (Marković 1993).

Zemljevid ***Völker-, Kreis-, Gerichts-, Eisenbahn- und Post-Karte der Herzogthümer Steiermark, Kärnthen, Krain, der Grafschaften Görz, Gradisca, Istrien und der Reichstadt Triest*** (Etnični, okrožni, sodni, železniški in poštni zemljevid vojvodin Štajerske, Koroške, Kranjske, grofij Goriška, Gradiška, Istra in cesarskega mesta Trst) je v drugi polovici 19. stoletja (po letu 1857) na Dunaju izdal Franz Raffelsperger (1793–1861) (Völker- … okrog 1857). Ob robu kartografskega prikaza so številni statistični podatki. Na nekaterih izdajah je z barvami prikazana etnična sestava prebivalstva (slika 57).

V šestdesetih letih 19. stoletja je bil dejaven Blaž Kocen (1821–1871). Znan je predvsem po izdelavi šolskih atlasov in geografskih učbenikov. Izdelal je številne stenske in ročne zemljevide, med katerimi so tudi zemljevidi slovenskih dežel: **Kranjska, Štajerska, Koroška**. Njegove zemljevide odlikuje nazorno prikazano površje in racionalna naselbinska mreža (Žagar 1973; Bratec Mrvar s sodelavci 2011).

Od leta 1873 so izhajali zemljevidi ***Specialkarte der österreichisch-ungarischen Monarchie*** (Specialni zemljevidi avstro-ogrske monarhije) (slika 58). Kot podlaga zanje je bila uporabljena tretja vojaška izmera (Molnár in Timár 2009). Izdelal jih je Vojaški geografski inštitut na Dunaju, služili pa so vojaškemu in civilnemu namenu ter bili podlaga številnim poznejšim topografskim in tematskim zemljevidom. Za celotno monarhijo je bilo izdelanih 715 listov v merilu 1 : 75.000 (Peterca s sodelavci 1974; Marković 1993).

Leta 1878 je Nemec Carl Friedrich Baur (druga polovica 19. stoletja) izdelal dvojezični stenski zemljevid ***Herzogthum Krain Vojvodstvo Kranjsko*** v merilu 1 : 150.000 (Orožen 1901; Dörflinger in Neunteufl 1986).

Urednikovanje prvega atlasa sveta v slovenskem jeziku, imenovanega **Atlant** (Fridl s sodelavci 2005), je prevzel Matej Cigale (Urbanc 2005). Med letoma 1869 in 1877 je izšlo 18 zemljevidov, ki prikazujejo svet ter njegove posamezne dele (slika 59). Od 28.075 zapisov zemljepisnih imen in posameznih občih pojmov je poslovenjenih kar 5907 ali 21 % (Kladnik 2005).

Čeprav je izšel leta 1921, na koncu omenjamo še **Zemljevid slovenskega ozemlja** v merilu 1 : 200.000 (slika 60), ki je leto

Quartermaster General Staff in Vienna. It was produced at a 1:144,000 scale based on the second military survey. It is composed of thirty-six sheets (Figure 49), each measuring approximately 27.5 × 40 cm, and an index map (von Witzleben 1850). The mapmaking technique used is black-and-white lithography. It was reprinted in 1842.

The map ***General-Karte des Königreichs Illyrien nebst dem Königlich Ungarischen Littorale*** (General Map of the Kingdom of Illyria with the Hungarian Littoral; Figure 50) was published in 1843 by the Military Geographic Institute in Vienna. It consists of four 1:288,000 sheets (von Witzleben 1850) and is distinguished by a high density of place names, which does not affect its readability, and a high-quality presentation of the borders of individual parts of the territory.

Between 1844 and 1846, Heinrich Freyer (1802–1866) published the sixteen sheets of his ***Special-Karte des Herzogthums Krain*** (Detailed Map of the Duchy of Carniola; Figure 51). The map was created based on the second military survey, at a scale of 1:113,500. It was printed using the new five-color lithography technique. Among other things, the map provides geographical names in Slovenian (Figure 4) as well as the locations of ore deposits and mine structures (Orožen 1901; Leban 1954; Longyka 1999).

In 1852, Peter Kosler (1824–1879) published his ***Zemljovid slovenske dežele in pokrajin*** (Map of Slovenian Territory and Regions; Figure 52); the actual year printed on the map is 1853. It covers Carniola, Carinthia, the Austrian Littoral, Styria as far as Graz, Benecia (Friulian Slavia), and part of Croatia. This is the first map of ethnic Slovenian territory with place names provided exclusively in Slovenian. Because of political complications surrounding its publication, the map was only allowed to be distributed in 1861. It was later reprinted several times. The most important appendix, which was already planned for the 1853 edition, but only ended up being included in the second, 1864 edition of the map, was *Imenik mest, tergov in krajev* (Index of Towns, Market Towns, and Villages). For many years, this was the only index of toponyms covering all Slovenian ethnic territory.

In 1856, ***General-Karte des Oesterreichischen Kaiserstaates mit einem grossen Theile der angrenzenden Länder*** (General Map of the Austrian Imperial State with a Large Portion of Its Neighboring Lands) was published. It was created by Joseph von Scheda (1815–1888), head of the Military Geographic Institute in Vienna at that time. The map is composed of twenty 1:576,000 sheets. It is an example of high-quality cartography, but its readability is limited by the density of geographical names (Marković 1993).

The map ***Völker-, Kreis-, Gerichts-, Eisenbahn- und Post-Karte der Herzogthümer Steiermark, Kärnthen, Krain, der Grafschaften Görz, Gradisca, Istrien und der Reichstadt***

pozneje dobil še *Kazalo krajev na Zemljevidu slovenskega ozemlja*. Delo je namreč začelo nastajati že ob koncu 19. stoletja, kot podlaga pa mu je služila habsburška vojaška izmera. Njegova značilnost je velika gostota zemljepisnih imen in zato slabša preglednost (Kranjec 1964).

Slika 3: Bovška kotlina na *Specialkarte der österreichisch-ungarischen Monarchie* (list Bovec, vrstica 20, stolpec IX.) iz leta 1891.
Figure 3: The Bovec Basin on the 1891 *Detailed Map of Austria-Hungary* (Flitsch sheet, row 20, column IX).

Triest (Ethnic, District, Court, Railway, and Postal Map of the Duchies of Styria, Carinthia, Carniola, the Counties of Gorizia, Gradisca, Istria, and the Imperial Town of Trieste) was published by Franz Raffelsperger (1793–1861) in the second half of the nineteenth century (after 1857) in Vienna (Völker- … c. 1857). A large amount of statistical information is provided on the sides of the map. Some editions present the ethnic composition of the population in colors (Figure 57).

The 1860s were marked by the activity of Blasius Kozenn (1821–1871), who is primarily known for his school atlases and geographical textbooks. He produced many wall and pocket maps, including maps of Austrian provinces with Slovenian population: **Carniola, Styria, and Carinthia**. His maps are distinguished by a clear presentation of terrain and a judicious selection of settlements (Žagar 1973; Bratec Mrvar et al. 2011).

From 1873 onward, ***Specialkarte der österreichisch-ungarischen Monarchie*** (Detailed Map of Austria-Hungary; Figure 58) was published. The map was based on the third military survey (Molnár and Timár 2009) and was produced by the Military Geographic Institute in Vienna. It was intended for both the military and civilians, and it formed the basis for many later topographic and thematic maps. A total of 715 sheets at a scale of 1:75,000 were produced for the entire monarchy (Peterca et al. 1974; Marković 1993).

In 1878, the German Carl Friedrich Baur (second half of the nineteenth century) created the bilingual wall map ***Herzogthum Krain Vojvodstvo Kranjsko*** (The Duchy of Carniola) at a scale of 1:150,000 (Orožen 1901; Dörflinger and Neunteufl 1986).

The editing ***Atlant***, the first world atlas in Slovenian (Fridl et al. 2005), was carried out by Matej Cigale (Urbanc 2005). Eighteen maps were published between 1869 and 1877, depicting the world and its individual parts (Figure 59). Out of a total of 28,075 geographical names and common nouns used, as many as 5,907 or 21% were Slovenianized (Kladnik 2005).

Even though the 1:200,000 map ***Zemljevid slovenskega ozemlja*** (Map of Slovenian Territory) was published in 1921 and received an index of place names (*Kazalo krajev na Zemljevidu slovenskega ozemlja*) the following year, it is mentioned at the end of this chapter (Figure 60). The map already started being created in the late nineteenth century, using the Habsburg military survey as its basis. It is characterized by a high density of geographical names and hence poorer clarity (Kranjec 1964).

4 Zemljevid kot kulturna dediščina

Pojem kulturne dediščine ima številne definicije. Pri UNESCU (Mexico … 1982) zagovarjajo, da »… *vključuje materialna in nematerialna dela, v katerih se izraža ljudska kreativnost* …«. Spet druga definicija pravi, da »*za kulturno dediščino običajno veljajo kraji, premična in nepremična dela, običaji, znanja in druge stvari, ki jih je skupina ali družba opredelila za stare, pomembne in zato vredne zavestnih ohranitvenih ukrepov* …« (Brumann 2015, 414) ali, da gre za »… *zapuščino materialnih del in nematerialnih lastnosti družbe, podedovanih od preteklih generacij* …« (Willis 2014, 147). Podobno tudi slovenski Zakon o varstvu kulturne dediščine (Zakon … 2008) opredeljuje dediščino kot »… *dobrine, podedovane iz preteklosti* …«.

Z vidika zemljevida kot kulturne dediščine gre za odraz ljudske ustvarjalnosti pri doživljanju prostora. Po eni strani je zemljevid **nematerialni odraz** vsakokratnega kulturnega dojemanja prostora, po drugi pa **materialni sad** tehnologije in umetnosti nekega časa. V zgodovini kartografskih prikazov tako spremljamo kognitivni kot tehniški in umetniški razvoj človeštva.

4.1 Pomen zemljevida

Zemljevid je dokument časa, ki na svojstven, grafičen način kodira številne informacije o prostoru, kulturi in družbi (Bidney in Piekielek 2018). Je orodje za upodabljanje ozemlja, izražanje hrepenenja po prostoru ter izraz človeške sposobnosti za ustvarjanje simbolov in prepoznavanje vzorcev. Z njim lahko od najzgodnejših civilizacij pa vse do sedanjosti sledimo dojemanju prostora (Harley 1992). Zemljevid kot grafični prikaz olajša prostorsko razumevanje in je kot tak rezultat visoke ravni abstraktnega mišljenja (Jobst 2006). S kartiranjem dejanskega prostora, abstrakten človek miselno obvladuje svoj svet.

Kot zbirka izbranih in kodiranih informacij odsevajo zemljevidi vojaške, politične, ekonomske, kulturne, verske in druge družbene vzorce ter s tem podajajo odgovore na mnoga vprašanja o preteklosti. Kot **zgodovinski dokumenti** so nepogrešljivi viri pri kronološkem iskanju pokrajinskih, okoljskih, demografskih, jezikovnih, gospodarskih, prometnih, podnebnih in drugih sprememb. Vendar je treba različne elemente zemljevida presojati v kontekstu njegovega nastanka, saj zemljevid hkrati odseva resničnost in se ji upira (Mlinarić in Miletić Drder 2017). Zgodbe, ki jih pripovedujejo zemljevidi, so zato

4 Maps as Cultural Heritage

The term »cultural heritage« has many definitions. According to UNESCO (Mexico … 1982), »it includes both tangible and intangible works through which the creativity of that people finds expression.« Based on other definitions, »cultural heritage is usually taken to mean the sites, movable and immovable artifacts, practices, knowledge items, and other things that a group or society has identified as old, important, and therefore worthy of conscious conservation measures« (Brumann 2015, 414), or it »is the legacy of physical artifacts and intangible attributes of society inherited from past generations« (Willis 2014, 147). Similarly, the Slovenian Cultural Heritage Protection Act (Zakon … 2008) defines heritage as »assets inherited from the past.«

From the cultural heritage perspective, maps reflect human creativity in experiencing space. On the one hand, they are **immaterial reflections** of cultural spatial perceptions at a given time, and on the other a **material result** of the technology and art of a specific period. Hence, both cognitive as well as technological and artistic human development can be traced through map history.

4.1 The Importance of Maps

Maps are documents of their time that encode a wealth of information about the environment, culture, and society in a unique, graphic way (Bidney and Piekielek 2018). They are tools for depicting territories and expressing human longing for space, and a reflection of the human capacity to create symbols and recognize patterns. Through them, the sensing of space can be traced from the earliest societies to the present (Harley 1992). As graphic representations, maps facilitate the comprehension of space and as such are the result of a high level of abstract thinking (Jobst 2006). By mapping physical space an abstract human being cognitively controls it.

As collections of selected and encoded information, maps reflect military, political, economic, cultural, religious, and other social patterns, answering many questions about the past. As **historical documents**, they are an indispensable source in the chronological identification of landscape, environmental, demographic, linguistic, economic, transport, climate, and other change. However, various elements of maps must be analyzed within the context of their creation because they both reflect and fight reality (Mlinarić and Miletić Drder 2017). Thus, the stories they tell are »epics«

»epi« o človeški vztrajnosti pri soočenju z naravnimi ovirami, kot tudi o premagovanju kulturnih predsodkov in iskanju lastne identitete.

Dostop do natančnejših prostorskih upodobitev je bil do 19. stoletja omejen. Zemljevidi so pogosto nosili pečat varovane vojaške skrivnosti (na primer zemljevidi novo odkritih ozemelj ali različnih vojaških izmer) in bili dostopni samo izbrancem. Pomanjkanje znanja o naravnogeografskih značilnostih ozemlja je bilo pogosto zakrito z okrasnimi elementi (podobe domorodcev in domišljijskih ali resničnih živali), ali pa je bila določena upodobitev s pomočjo kartografskega posploševanja preračunljivo prikazana. Geografska dejstva so se na zemljevidih prepletala s »kartografsko retoriko« izbire podatkov in simbolov, kar je izražalo tudi gospodarsko ali politično moč naročnikov zemljevidov. V dobi odkrivanja in osvajanja novih ozemelj med 15. in 18. stoletjem so zemljevidi odsevali tudi gospodarsko tekmovalnost, ki se je skrivala v politični dejavnosti. Prikazovanje domorodnih ljudstev kot barbarov je opravičevalo potrebo po njihovem civiliziranju, pravljično rudno bogastvo je spodbujalo nadaljnja raziskovanja in osvajanja, dodani grbi oziroma drugi simboli oblasti pa so razmejevali pravice do ozemelj. Še v 17. stoletju so v atlasih evropskih kartografov na številnih zemljevidih všečne upodobitve domišljijskih pokrajin (tudi prikazi slovenskega ozemlja v atlasih kartografske družine Blaeu so takšni), ki so zastrli družbena in gospodarska nasprotja (Delano-Smith 1992).

4.2 Kartografija in kulturna dediščina

Kartografija je v zgodovini nenehno nihala med številčnostjo in natančnostjo prikazanih podatkov na eni strani ter estetiko in berljivostjo kartografskih prikazov na drugi. Iskala je in še išče ravnovesje med tehničnimi zmožnostmi podajanja prostorskih informacij in umetniškim oblikovanjem zemljevidov (Fernandez in Buchroithner 2014). Vendar se zemljevidi od umetniških del razlikujejo predvsem po omejeni svobodi (umetniškega) izražanja, saj so elementi topografskih podlag in oblikovanje kartografskih znakov vnaprej dogovorjeni.

Zemljevid poleg informacij o prostorskih danostih omogoča tudi čustveno izkušnjo. V srednjem veku so bili zemljevidi pogosto dekoracije ali miniaturni dodatki k rokopisom, ki so jih najpogosteje risali umetniki. Srednjeveški in renesančni kartografi so zemljevid imenovali *orbis imago* (podoba sveta) ali *pictura* (slika) (Bagrow in Skelton 2010; Krogt 2015). V obdobju lesorezne tehnike in zgodnjega bakrotiska v 15. in 16. stoletju so posamezne ornamente na zemljevidih gravirali in barvali veliki grafični mojstri tistega časa, kot na primer nemška slikarja Albrecht Dürer (1471–1528) in Hans Holbein (1497/98–1543). Tudi pozneje v 17. in 18. stoletju so kartografske delavnice združevale mojstre različnih umetniških veščin (na primer graverje, tiskarje, risarje, slikarje, kaligrafe),

about human perseverance in confronting natural barriers, as well as about overcoming cultural prejudices and seeking one's own identity.

Until the nineteenth century, access to detailed spatial representations was restricted. Maps were often labeled a military secret (e.g., maps of newly discovered territories or various military surveys) and only accessible to the select. Lack of knowledge of the natural geographical characteristics of a given territory was often disguised through decorative elements (e.g., illustrations of indigenous peoples and imaginary or real animals) or a specific depiction was provided in a calculated way using cartographic generalization. On maps, geographical facts alternated with the »cartographic rhetoric« of selecting data and symbols, which also reflected the economic and political power of those that had commissioned the maps. During the Age of Discovery between the fifteenth and eighteenth centuries, maps also reflected economic competitiveness hidden in political activity. Depictions of indigenous peoples as barbarians justified the need to civilize them, fantastic mineral wealth stimulated further explorations and conquests, and the coats of arms and other power symbols added to the maps demarcated the claims to specific territories. Even as late as the seventeenth century, atlases produced by European cartographers included many maps containing attractive depictions of imaginary regions (including the depictions of Slovenian territory in the Blaeu atlases) that obscured social and economic differences (Delano-Smith 1992).

4.2 Cartography and Cultural Heritage

Throughout history, cartography kept oscillating between the number and accuracy of the data depicted on the one hand and the aesthetics and readability of maps on the other. It has sought and continues to seek a balance between the technical options of conveying spatial information and artistic map design (Fernandez and Buchroithner 2014). However, maps are distinguished from works of art primarily by their limited freedom of (artistic) expression because elements of the topographic bases and the design of cartographic symbols are defined in advance.

In addition to conveying information on spatial features, maps also provide an emotional experience. In the Middle Ages, they were often used as decorations or miniature additions to manuscripts most often drawn by artists. Medieval and Renaissance cartographers referred to maps as *orbis imago* 'images of the world' or *pictura* 'pictures' (Bagrow and Skelton 2010; Krogt 2015). During the period of lithography and early copper engraving (i.e., the fifteenth and sixteenth centuries), individual ornaments on maps were engraved and colored by the great masters of that time, such as the German painters Albrecht Dürer (1471–1528) and Hans

saj je izdelava zemljevidov zahtevala različne spretnosti. Avtor je uporabljal bogastvo kartografskih in umetniških elementov ter domišljije, ki jih je med seboj prepletal: naslovne kartuše, upodobitve ljudi v nošah ali pri vsakdanjih opravilih (na primer Hacquetov Litološko-hidrografski zemljevid slovanskih narodov iz leta 1778; slika 41), cehovske grbe (na primer Florjančičev Horografski zemljevid vojvodine Kranjske iz leta 1744; slika 33), okraske in geometrijske podobe, morske pošasti, ladje ali različno rastje. Na zemljevidih so tudi portreti vladarjev in avtorjev zemljevidov (na primer Vischerjev portret na zemljevidu Štajerske iz leta 1678; slika 24) ter vedute trgov, utrdb in mest, kot priče njihovega arhitekturnega razvoja (na primer Homannov zemljevid Kranjske iz začetka 18. stoletja; slika 30). Večina kartografskih elementov je bila pred standardizacijo risanih z umetniškim pridihom (na primer hribi in gozdovi). Nekateri zemljevidi so imeli izključno dekorativno vlogo in jih najdemo na gobelinskih tapiserijah ali kovčkih za nakit. Posebno glamurozni so bili prvi atlasi, vezani v usnje s pozlato ali bogatimi detajli (Frangeš in Župan 2013). Do 18. stoletja so prevladovali poudarjena simbolika, igrivost in domišljijski kartografski prikazi. Pozneje v kartografiji prevladujeta racionalnost ter razvoj kartografskih načel oblikovanja zemljevidov, ki sta predvsem posledica državnoupravnih potreb po natančnem, enotnem in standardiziranem kartografskem prikazu (Škiljan 2006) oziroma kot sta zapisala Bagrow in Skelton (2010, 21): »*Šele v 18. stoletju so zemljevidom postopoma odvzemali umetniško okrasje in jih spremenili v preprostejše, a z meritvami podkrepljene natančnejše vire informacij*.«

Zemljevid je tudi odsev kartografa kot določenega člana družbe v določenih zgodovinskih okoliščinah (Woodward 2007; Bagrow in Skelton 2010; Mlinarič in Miletić Drder 2017). Lep primer so zemljepisna imena ali toponimi oziroma razvoj slednjih na določenem ozemlju. Slovensko ozemlje je bilo stoletja pod nemško govorečim vplivom in posledično so bila na večini zemljevidov do sredine 19. stoletja navedena zgolj nemška zemljepisna imena. Jezik zemljevidov je izpolnil vlogo razlikovanja vladajoče elite od večinskega prebivalstva ter služil kot politično orodje nemške kulture, ki ji je kartograf pripadal ali sledil.

Zemljevidi zrcalijo kartografsko tradicijo obdobja, v katerem so nastajali. Založniške hiše znanih kartografov (na primer Willem Janszoon Blaeu, Nicolas Sanson, Johann Baptist Homann) so bile pri izdelavi in prodaji zemljevidov uspešnejše in bolj iskane na trgu, saj so bile jamstvo za uspešno prodajo ter za tisti čas dovolj kakovostno izdelavo in umetniško vrednost izdanih kartografskih del (Mlinarič in Miletić Drder 2017). Kartografske plošče so se razmnoževale in dopolnjevale, prodajale in dedovale. Takšne tradicije se niso mogle izogniti nekritičnemu posploševanju ali prevzemanju pogosto zastarelih oziroma napačnih podatkov, kar je omejevalo natančnost in točnost kasnejših kartografskih prikazov. Pogosto so bili nenatančni zemljevidi zrcalo tedanjega znanja

Holbein (1497/98–1543). Even later, during the seventeenth- and eighteenth centuries, mapmaking workshops brought together masters of various artistic skills (e.g., engravers, printers, drawers, painters, and calligraphers) because mapmaking required a wide variety of skills. Mapmakers used and combined a wealth of cartographic and artistic elements and imagination: title cartouches, illustrations of people in folk costumes or while performing their daily chores (e.g., Hacquet's 1778 Lithological and Hydrological Map of the Slavic Nations; Figure 41), guild crests (e.g., Florjančič's 1774 Chorographic Map of the Duchy of Carniola; Figure 33), ornaments and geometric shapes, sea monsters, ships, and various vegetation. Maps also featured portraits of rulers and their creators (e.g., Vischer's portrait on his 1678 map of Styria; Figure 24) and panoramas of market towns, fortresses, and cities testifying to their architectural development (e.g., Homann's early eighteenth-century map of Carniola; Figure 30). Before becoming standardized, most cartographic elements were drawn with an artistic flair (e.g., hills and forests). Some maps played an exclusively decorative role, featuring on tapestries or jewelry boxes. The first atlases bound in leather with gilded elements or rich details were especially glamourous (Frangeš and Župan 2013). Accentuated symbolism, playfulness, and imaginary cartographic representations predominated until the eighteenth century. Later cartography became dominated by rationality and the development of cartographic design principles, which primarily arose from the need for accurate, uniform, and standardized maps (Škiljan 2006) or, as argued by Bagrow and Skelton (2010, 21), »it was not until the eighteenth century, however, that maps were gradually stripped of their artistic decoration and transformed into plain, specialist sources of information based upon measurement.«

Maps are also a reflection of the cartographer as a member of society during specific historical circumstances (Woodward 2007; Bagrow and Skelton 2010; Mlinarič and Miletić Drder 2017). A good example of this is the geographical names or toponyms used, or their development in a specific territory. Slovenian territory was under the influence of German for centuries, and hence most maps printed by the mid-nineteenth century only used German geographical names. The language used on the maps fulfilled the role of distinguishing the ruling elite from the majority population and served as a political tool of the German culture that the cartographer belonged to or abided by.

Maps reflect the mapmaking tradition of the period in which they were created. The publishing houses of renowned mapmakers (e.g., Willem Janszoon Blaeu, Nicolas Sanson, and Johann Baptist Homann) were more successful in producing and selling maps and were also more sought after on the market because they guaranteed good sales as well as sufficient quality and artistic value of the maps they published (Mlinarič and Miletić Drder 2017). Map printing plates were reproduced, supplemented, sold, and inherited. Such traditions could not

in (ne)razpoložljivih podatkov (Bagrow in Skelton 2010). Lep primer je kakovostni prikaz Istre Pietra Coppa v začetku 16. stoletja (slika 5), ki ga na zemljevidih poznega 16. stoletja ne zasledimo. Izpostavimo pa lahko tudi vpliv kartografskih del vsestranskega cesarjevega svetovalca Wolfganga Laziusa (slika 10), katerih pomanjkljivosti so se na zemljevidih današnjega slovenskega ozemlja prenašale vse do Janeza Vajkarda Valvasorja oziroma Johanna Baptista Homanna.

V času globalizacije razumevanje kulturne dediščine, tudi kartografske, spodbuja spoštovanje in obuja dialog med različnimi kulturami. Kulturna dediščina je osrednja sestavina kulturne identitete, kulturne raznolikosti in medkulturnega dialoga. Tudi zemljevidi slovenskega ozemlja odsevajo politične, kulturne, ekonomske in druge vplive, njihovi avtorji pa so omogočili védenje o slovenskem prostoru. Ker nam dediščina pomaga razumeti preteklost in ustvariti boljšo prihodnost, je pomembno, da je ne prepustimo pozabi, propadu ali uničenju. Pri tem imajo odločilno vlogo dediščinske ustanove: knjižnice, arhivi in muzeji, ki stoletja skrbijo, da je z njenim ohranjanjem, razumevanjem in preučevanjem dosegljiva posamezniku, skupnosti in družbi ter krepi občutek narodne pripadnosti.

avoid uncritical generalization or borrowing of often outdated or incorrect information, which limited the accuracy of later maps. Inaccurate maps often mirrored the state of knowledge of a specific period and (un)availability of data (Bagrow and Skelton 2010). A good illustration of this is Pietro Coppo's high-quality depiction of Istria from the early sixteenth century that cannot be found on any of the maps produced at the end of the century. Another example is the influence of the maps produced by the versatile advisor to the emperor, Wolfgang Lazius, whose deficiencies continued to be repeated on maps of what is now Slovenian territory up to Johann Weikhard von Valvasor or Johann Baptist Homann.

During the time of globalization, understanding cultural heritage, including maps, fosters respect and reestablishes dialogue between various cultures. Cultural heritage is the central component of cultural identity, cultural diversity, and intercultural dialogue. Maps of Slovenian territory also reflect political, cultural, economic, and other influences, and their creators made it possible for us to know more about the Slovenian environment. Because heritage helps people understand the past and create a better future, it is vital that it not fall into oblivion or decay and not be destroyed. A key role in this is played by heritage institutions, such as libraries, archives, and museums, which for centuries have conserved, interpreted, and studied heritage in order to make it available to individuals, the community, and society in general, and for it to strengthen Slovenian identity.

Slika 4: Cerkniško jezero na *Special-Karte des Herzogthums Krain* avtorja Henrika Freyerja iz leta 1846.
Figure 4: Lake Cerknica on Henrik Freyer's *Detailed Map of the Duchy of Carniola* of 1846.

5 Zemljevidi slovenskega ozemlja / Maps of Slovenian Territory

Slika 5: Zemljevid Istre je leta 1525 izdal kartograf iz Izole Pietro Coppo ter ga dodal piranskemu kodeksu *De summa totius orbis* (O celoti vsega sveta).

Figure 5: This map of Istria was published in 1525 by Pietro Coppo, a cartographer from Izola, who added it to his Piran codex *De summa totius orbis* (Summary of the Entire World).

Slika 6: Zaledje Kopra.
Figure 6: Koper and its hinterland.

Slika 7: Med Koprskim in Piranskim zalivom.
Figure 7: Area between the Bay of Koper and the Bay of Piran.

Slika 8: Limski kanal v hrvaški Istri.
Figure 8: Lim Bay in Croatian Istria.

Kartograf Pietro Coppo (1469 ali 1470–1555 ali 1556) je leta 1525 izdal najstarejši znani posamezni zemljevid Istre. Velik del svojega življenja je preživel v Izoli in je prvi kartograf s tega dela Jadrana, ki je izdal tiskano zbirko zemljevidov (Kozličić 1995). Njegova ohranjena dela so: *De toto orbe* (O vsem svetu, 1518–1520), *De summa totius orbis* (O celoti vsega sveta, 1524–1526), *Portolano* (Portolan, 1528) in *Del sito de Listria* (O položaju Istre, 1529, izšlo 1540), katera v veliki meri sestavljajo tudi zemljevidi (Žitko 1999).

Zemljevid Istre je bil dodan piranskemu kodeksu *De summa totius orbis*. Prikazuje območje Tržaškega zaliva od Gradeža v Italiji, Istro z zaledjem, do severnega Kvarnerja na Hrvaškem. Za tisti čas so zelo natančno narisane obale, prikaz katerih se proti jugu in vzhodu slabša, prav tako pa se veča popačenost prikaza z oddaljenostjo od morja.

Zemljevid meri približno 26 × 34 cm, odtisnjen pa je bil v lesorezni tiskarski tehniki. Orientacijo zemljevida določa osem simbolov. Zgornji rob zemljevida je usmerjen proti severu oziroma severovzhodu (Lago in Rossit 1984). Za prikaz reliefa so uporabljene preproste vzpetine, ki so združene v obliko razpotegnjenih »gosenic« ali v večjo enotno površino ter pobarvane z rumenorjavo barvo (slika 6). Hidrografska mreža prikazuje vse pomembnejše vodotoke, s tem da so nekateri prikazi močno povečani (Mirna) oziroma napačno orientirani (Limski kanal; slika 8). Zemljevid je bogat s stiliziranimi kartografskimi znaki za naselja in z zemljepisnimi imeni, ki so navedena z velikimi in malimi tiskanimi črkami. Prav tako je zemljevid vir številnih drugih podatkov. S pikicami so označene plitvine (okolica Kopra; sliki 6 in 7), s križci čeri (okolica Umaga), označene so soline (Sečovlje), mlini (na Rižani), jame (pri Socerbu) ter mostovi (Lago in Rossit 1984).

Coppov zemljevid Istre je najstarejši poznani zemljevid Istre (Lago in Rossit 1984) ter najstarejši podrobni prikaz dela slovenskega ozemlja (Terčon, Bonin in Čerče 2006). Prav tako velja za najkakovostnejšo kartografsko upodobitev istrskega polotoka do sredine 18. stoletja (Longyka 1999). Mnogi poznejši kartografi zemljevida ali niso poznali ali pa ga niso uporabili kot predlogo, zato številni poznejši zemljevidi ne dosegajo njegove kakovosti. Coppov vpliv na kartografijo je kljub temu pomemben. V prid temu govori objava Coppovega prikaza Istre iz leta 1540, ki ga je Abraham Ortelius vključil v svoj atlas *Theatrum Orbis Terrarum* po letu 1573 (Žitko 1999).

The cartographer Pietro Coppo (born 1469 or 1470, died 1555 or 1556) published the oldest known separate map of Istria in 1525. He spent a large part of his life in Izola (now in Slovenia), and he was the first mapmaker from this part of the Adriatic to publish a printed collection of maps (Kozličić 1995). Coppo's works preserved to date, which all contain a large number of maps, include the following: *De toto orbe* (The Entire World, 1518–1520), *De summa totius orbis* (Summation of the Entire World, 1524–1526), *Portolano* (Portolan, 1528), and *Del sito de Listria* (Description of Istria, 1529, published 1540) (Žitko 1999).

The map of Istria was added to the Piran codex *De summa totius orbis*. It shows the Bay of Trieste extending from Grado in Italy, Istria with the hinterland, and the northern Kvarner Gulf in Croatia. The coastline is drawn extremely accurately for that time, although its depiction deteriorates toward the south and west. The map also becomes less accurate with distance from the sea.

The map measures approximately 26 × 34 cm and was printed using the woodcut technique. Its orientation is defined by eight symbols, with its top facing the north or northeast (Lago and Rossit 1984). The terrain is depicted in the form of simple hills combined into elongated caterpillar-like shapes or a larger single area and colored in ochre (Figure 6). The hydrographic network shows all major watercourses, with some significantly magnified (the Mirna River) or with an incorrect orientation (Lim Bay; Figure 8). The map is rich in stylized cartographic symbols for settlements and geographical names provided in upper or lower case. In addition, it provides a great deal of other information. The shoals (the area around Koper; Figures 6 and 7) are marked with dots, the reefs (around Umag) with crosses, and other features marked on the map are saltpans (in Sečovlje), mills (on the Rižana River), caves (at Socerb), and bridges (Lago and Rossit 1984).

Coppo's map is the oldest known map of Istria (Lago and Rossit 1984) and the oldest detailed map of a part of Slovenian territory (Terčon, Bonin, and Čerče 2006). In addition, it is considered the highest-quality cartographic representation of the Istrian peninsula until the mid-eighteenth century (Longyka 1999). Many later cartographers either did not know the map or did not use it as a base, and so many later maps do not attain its quality. Coppo's influence on cartography is nonetheless important. This is supported by the fact that his map of Istria created in 1540 was published in Abraham Ortelius's atlas *Theatrum Orbis Terrarum* after the year 1573 (Žitko 1999).

Slika 9: Zemljevid *Descriptio totius Illyridis* (Opis celotne Ilirije) je delo nemškega kartografa Sebastiana Münstra, ki ga je dodal izdajam Kozmografije sredi 16. stoletja.

Figure 9: The map *Descriptio totius Illyridis* (Description of All Illyria) was created by the German cartographer Sebastian Münster, who added it to his editions of *Cosmographia* (Cosmography) in the mid-sixteenth century.

Slika 10: Zemljevid *Ducatus Carniolae et Histriae una cum Marcha Windorum* (Vojvodina Kranjska in Istra s Slovensko marko) je del zbirke zemljevidov, ki jih je leta 1561 izdal habsburški kartograf Wolfgang Lazius.

Figure 10: The map *Ducatus Carniolae et Histriae una cum Marcha Windorum* (The Duchy of Carniola and Istria with the Windic March) is part of a collection of maps published by the Habsburg cartographer Wolfgang Lazius in 1561.

Slika 11: Tržaški zaliv z zaledjem.
Figure 11: The Bay of Trieste and its hinterland.

Slika 12: Med Cerkniškim jezerom in Kolpo.
Figure 12: Area between Lake Cerknica and the Kolpa River.

Slika 13: Porečje Save do Ljubljane.
Figure 13: The Sava Basin up to Ljubljana.

Slika 14: Med Sočo in Ljubljanico.
Figure 14: Area between Soča and Ljubljanica rivers.

Na Dunaju rojeni kartograf Wolfgang Lazius (1514–1565) je delal na dvoru rimsko-nemškega cesarja Ferdinanda I. in je avtor številnih zgodovinskih in kartografskih del (Kratochwill 1985). Zaradi posebnih zaslug ga je cesar imenoval za svojega osebnega zdravnika, zgodovinarja, svetovalca in kustosa cesarskih zbirk (Karrow 1993).

Pogosto je potoval po ozemlju današnje Avstrije, Madžarske, Bavarske, Švice in Alzacije, kjer je prepisoval stare napise in preučeval knjižne in kartografske vire v samostanskih knjižnicah. Med potovanji je risal skice krajevnih posebnosti, kar je uporabil pri poznejšem kartografskem delu (Karrow 1993).

Leta 1561 je izdal zbirko enajstih zemljevidov z naslovom *Typi chorographici Provinciarum Austriae* (Topografski tipi avstrijskih dežel). Zemljevidi so sprva izhajali posamezno, za tem pa so bili izdani kot celota. Zemljevidi so različnih velikosti, večina je narisanih v obliki ovala, eden je v obliki kroga, vse pa objema dvoglavi habsburški orel. Gre za prvo zbirko zemljevidov habsburških dežel (Bernleithner 1972; Holzer, Newby in Svatek 2015), ki jo lahko upravičeno imenujemo atlas (Karrow 1993).

Slovensko ozemlje je podrobneje prikazano na zemljevidu *Ducatus Carniolae et Histriae una cum Marcha Windorum* (Vojvodina Kranjska in Istra s Slovensko marko), ki meri približno 36 × 46 cm (Lazius 1906). Predstavlja prvi znani samostojni prikaz vojvodine Kranjske. Prikazuje ozemlje od Savinje (*Saan*) na severu do Jadranskega morja (*Mare Hadriaticum*; slika 11) na jugu ter od Furlanije-Julijske krajine na zahodu do Zagreba (*Sagrabia*) na vzhodu.

Za prikaz reliefa so uporabljene preproste senčene vzpetine, ki so različnih oblik in velikosti (sliki 12 in 14). Izstopajo gozdne površine (slika 12), med katerimi je nepretrgana linija gozdnate Hrušice (*Byrnpamerwald*). Pri hidrografski mreži izstopa Sava (slika 13) s pritoki, pretirano je poudarjena Rižana, ki predstavlja spodnji tok (neobstoječe) Planinske reke (*Alben flus*), preveliko pa je tudi Cerkniško jezero.

Kot zgodovinarju so mu zemljevidi služili za ilustrirano podobo dežel, kartografska točnost pa je nekoliko zanemarjena. Posledica je navidezno lep zemljevid, pretežno orientiran v smeri severa oziroma severovzhoda, s številnimi napakami, ki so opazne predvsem pri netočni lokaciji naselij in rek, gorovja pa so upodobljena le približno (slika 14; Slovenci . . . 1986; Longyka 1999).

Dele slovenskega ozemlja je Lazius prikazal še na treh drugih zemljevidih, in sicer na *Principat Goricens cum Karstio et Chaczeola descriptio* (Goriška kneževina z opisom Krasa in Kočevske), *Carinthiae ducatus cum palatinatu Goricia* (Vojvodina Koroške z grofijo Goriško), in *Ducatus Stiriae marchiae* (Vojvodina Štajerska) (Holzer s sodelavci 2015).

The cartographer Wolfgang Lazius (1514–1565), a native of Vienna, worked at the court of Holy Roman Emperor Ferdinand I and produced many historical and cartographic works (Kratochwill 1985). In recognition of his merits, the emperor made him his personal physician, historian, advisor, and curator of the imperial collections (Karrow 1993).

Lazius traveled extensively across what are now Austria, Hungary, Bavaria, Switzerland, and Alsace, copying old inscriptions and studying books and maps at monastic libraries. During his travels, he drew sketches of local special features, which he used in his later mapmaking activity (Karrow 1993).

In 1561, he published a collection of eleven maps titled *Typi chorographici Provinciarum Austriae* (Topographic Types of Austrian Provinces). The maps were initially published separately but were then issued together as a single collection. They vary in size, are mostly oval, except for one that is round, and all are stylized as a two-headed Habsburg eagle. This is the first collection of maps of the Habsburg lands (Bernleithner 1972; Holzer, Newby, and Svatek 2015) that can be justifiably referred to as an atlas (Karrow 1993).

Slovenian territory is presented in detail on the map *Ducatus Carniolae et Histriae una cum Marcha Windorum* (The Duchy of Carniola and Istria with the Windic March), which measures approximately 36 × 46 cm (Lazius 1906). It is the first known independent map of the Duchy of Carniola, depicting the territory from the Savinja (*Saan*) River in the north to the Adriatic Sea (*Mare Hadriaticum*; Figure 11) in the south, and the area from Friuli Venezia Giulia in the west to Zagreb (*Sagrabia*) in the east.

Simple shaded hills of various shapes and sizes are used to represent the terrain (Figures 12 in 14). Standing out are the wooded areas (Figure 12), with a continuous line of the wooded Hrušica Plaueau (*Byrnpamerwald*). The Sava (Figure 13) and its tributaries are depicted prominently among the rivers, the Rižana River is excessively accentuated, forming the lower reaches of the nonexistent river *Alben flus*, and Lake Cerknica is also too large.

As a historian, Lazius primarily used maps to illustrate individual lands, paying less attention to cartographic accuracy. This resulted in an attractive map at first glance, mainly oriented toward the north or northeast, with many errors noticeable especially with inaccurate locations of settlements and rivers, and mountains that are represented very vaguely (Figure 14; Slovenci . . . 1986; Longyka 1999).

Lazius also depicted parts of Slovenian territory on three other maps: *Principat Goricens cum Karstio et Chaczeola descriptio* (The Principality of Gorizia with a Description of the Karst and the Kočevje Region), *Carinthiae ducatus cum palatinatu Goricia* (The Duchy of Carinthia with the County of Gorizia), and *Ducatus Stiriae marchiae* (The Duchy of Styria; Holzer et al. 2015).

Slika 15: Zemljevid *Ducatus Carniolae una cum Marchia Windorum* (Vojvodina Kranjska s Slovensko marko) je leta 1569 izdal Benečan Bolognino Zaltieri.

Figure 15: The map *Ducatus Carniolae una cum Marchia Windorum* (The Duchy of Carniola with the Windic March) was published in 1569 by the Venetian Bolognino Zaltieri.

Slika 16: Zemljevid *Schlavoniae, Croatiae, Carniae, Istriae, Bosniae, finitimarumque regionum nova descriptio* (Novi prikaz Slavonije, Hrvaške, Kranjske, Istre, Bosne in sosednjih pokrajin) je leta 1570 Flamec Abraham Ortelius vključil v prvo izdajo atlasa *Theatrum Orbis Terrarum* (Gledališče sveta).

Figure 16: In 1570, the Flemish cartographer Abraham Ortelius included the map *Schlavoniae, Croatiae, Carniae, Istriae, Bosniae, finitimarumque regionum nova descriptio* (A New Depiction of Slavonia, Croatia, Carniola, Istria, Bosnia, and Neighboring Regions) in the first edition of his atlas *Theatrum Orbis Terrarum* (Theater of the World).

Slika 17: Zemljevid *Illyricum* (Ilirija) je leta 1572 izdal Madžar Ioanes Sambucus.

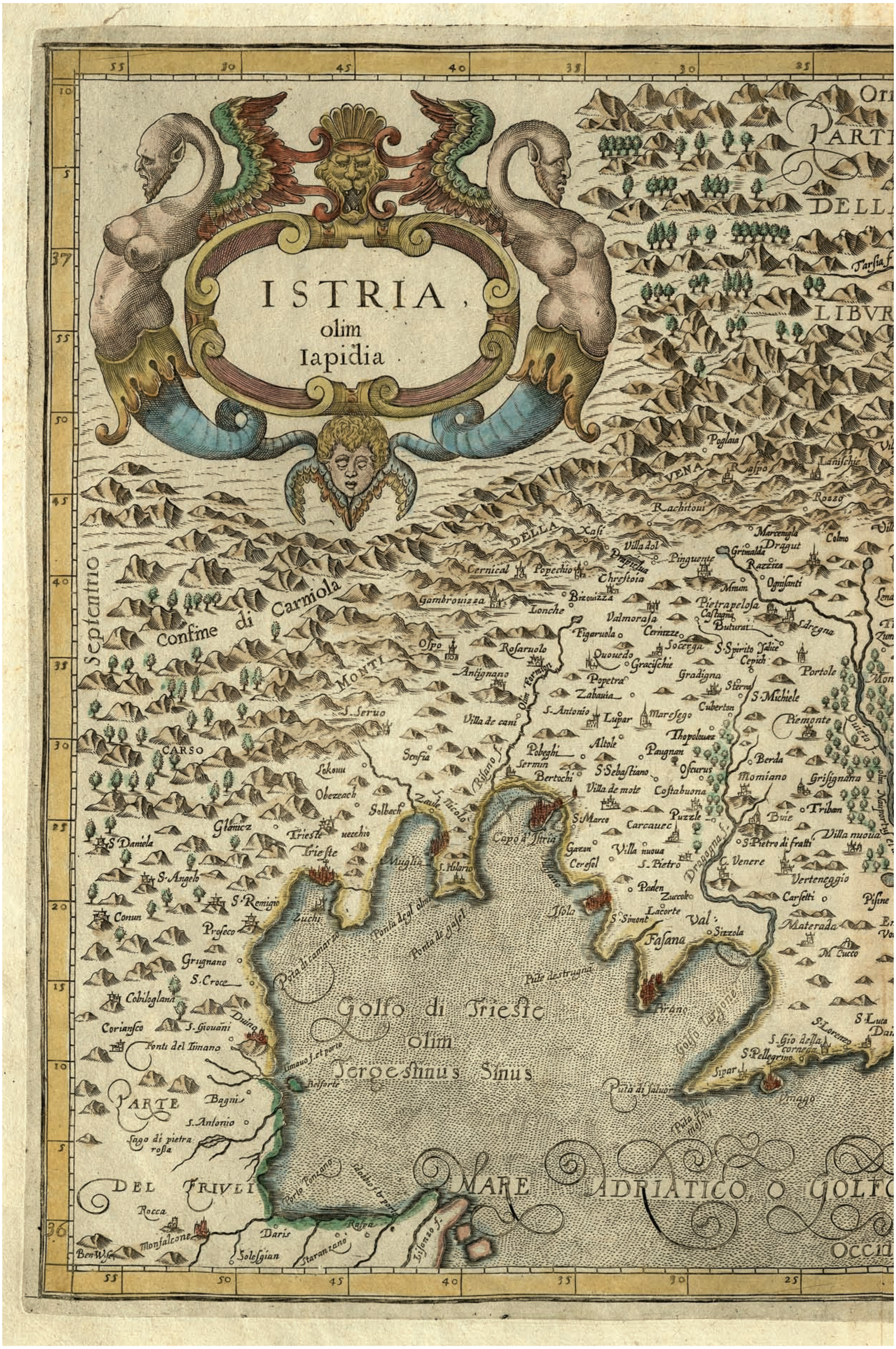
Figure 17: The map *Illyricum* (Illyria) was published in 1572 by the Hungarian Ioanes Sambucus.

Slika 18: Zemljevid *Forum Iulium, Karstia, Carniola, Histria et Windorum Marchia* (Furlanija, Kras, Kranjska, Istra in Slovenska marka) je leta 1589 izdal flamski kartograf Gerhard Kremer Mercator.

Figure 18: The map *Forum Iulium, Karstia, Carniola, Histria et Windorum Marchia* (Friuli, Karst, Carniola, Istria, and the Windic March) was published in 1589 by the Flemish cartographer Gerardus Mercator.

Slika 19: Zemljevid *Carniolae Chaziolae Q3 Ducatus nec non et Goritiae Comitatus* … (Vojvodina Kranjska in Kočevsko kakor tudi grofija Goriška …) je po Laziusovi predlogi izdelal Flamec Gerard de Jode, izšel pa je v atlasu *Speculum Orbis Terrae* (Ogledalo sveta) leta 1593.

Figure 19: The map *Carniolae Chaziolaeq Q3 Ducatus nec non et Goritiae Comitatus* . . . (The Duchy of Carniola and the Kočevje Area, as Well as the County of Gorizia . . .) was created by the Flemish cartographer Gerard de Jode based on Lazius's maps and published in the atlas *Speculum Orbis Terrae* (Mirror of the World) in 1593.



Slika 20: Zemljevid *Istria olim lapidia* (Istra, nekdanja Japidija) je leta 1620 izdal bolonjski kartograf Giovanni Antonio Magini.

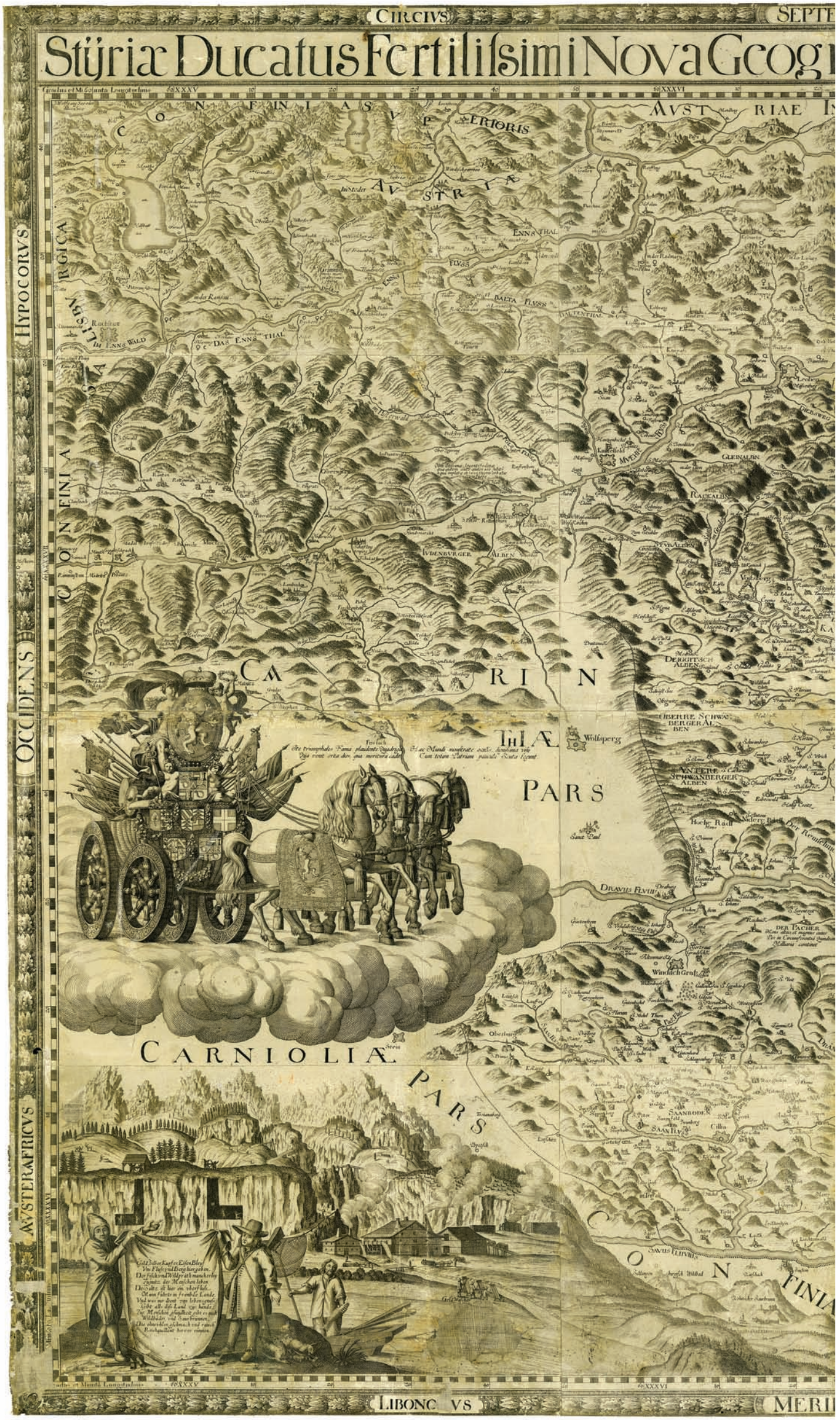
Figure 20: The map *Istria olim lapidia* (Istria, the Former Land of the Iapydes) was published in 1620 by Giovanni Antonio Magini, a cartographer from Bologna.

Slika 21: Zemljevid z nemškim in francoskim naslovom *Hertzogthūber Steyer, Karnten, Krain, & c./Duchés de Stirie, Carinthie, Carniole* … (Vojvodine Štajerska, Koroška in Kranjska …) je leta 1657 izdal francoski kartograf Nicolas Sanson.

Figure 21: A map with a German and French title, *Hertzogthūber Steyer, Karnten, Krain, & c. / Duchés de Stirie, Carinthie, Carniole* . . . (The Duchies of Styria, Carinthia, and Carniola . . .), was published in 1657 by the French cartographer Nicolas Sanson.

Slika 22: Zemljevid *Carniola, Cilia comitatus, et Windorum Marchia* (Kranjska, Celjska grofija in Slovenska marka) je okrog leta 1666 izdal Nizozemec Willem Janszoon Blaeu.

Figure 22: The map *Carniola, Cilia comitatus, et Windorum Marchia* (Carniola, the County of Celje, and the Windic March) was published by the Dutch cartographer Willem Janszoon Blaeu around 1666.



Slika 23: Zemljevid *Styriae Ducatus Fertilissimi Nova Geographica Descriptio* (Novi geografski opis nadvse rodovitne vojvodine Štajerske) je leta 1678 izdal habsburški kartograf Georg Matthäus Vischer.

Figure 23: The map *Styriae Ducatus Fertilissimi Nova Geographica Descriptio* (A New Geographical Description of the Most Fertile Duchy of Styria) was published in 1678 by the Habsburg cartographer Georg Matthäus Vischer.

Slika 24: Bogato okrašena kartuša z merilom in kartografskimi podatki.
Figure 25: Richly ornamented cartouche with a scale and cartographic information.

Slika 25: Porečje Drave med Slovenj Gradcem in Ptujem.
Figure 25: The Drava Basin between Slovenj Gradec and Ptuj.

Slika 26: Med Savinjo in Savo s Celjem.
Figure 26: Area between the Savinja and Sava rivers with Celje.

Zemljevid *Styriae Ducatus Fertilissimi Nova Geographica Descriptio* (Novi geografski opis nadvse rodovitne vojvodine Štajerske) je leta 1678 izdal kartograf Georg Matthäus Vischer (1628–1696). O izdelavi zemljevida se je dve leti pogajal s štajerskimi deželnimi stanovi, leta 1673 pa so sklenili pogodbo. Stanovi so mu izdali garantno pismo, s katerim so prosili lastnike gospostev ter mesta in trge, da mu omogočijo ogled in pomoč pri terenskem delu. Po številnih zapletih je zemljevid izšel pet let pozneje (Stopar 2006; 2013).

Zemljevid sestavlja 12 listov velikosti 37,7 × 45 cm. V prav toliko bakrenih plošč jih je vrezal Andreas Trost. Zemljevid skupaj meri približno 123 × 135 cm in ima za tisti čas veliko merilo med 1 : 160.000 in 1 : 173.000 (Stopar 2006), s katerim podrobno prikazuje ozemlje dežele Štajerske.

Za prikaz reliefa so uporabljene krtine oziroma preproste vzpetine (slika 25), ki so senčene in značilno poraščene. Ceste niso označene, z ravno belo črto pa so prikazani pomembnejši mostovi na rekah (slika 26). Z linijo črnih pik je na vzhodu označena meja med Štajersko in Ogrsko. Avtorjev velik prispevek so tudi zemljepisna imena, ki jih na zemljevidih tistega časa ni bilo. Na primer *Saanboden* (Savinjska dolina), *Die Windische Pihel* (Slovenske gorice), *Das Draw Feld* (Dravsko polje), *Der Pacher* (Pohorje; slika 25) in druga (Stopar 2006).

Vizualni vtis dajejo bogate ilustracije in besedila, ki zapolnjujejo prazen prostor. Na primer, slika v spodnjem levem kotu, ki prikazuje naravna bogastva dežele, ponazorjena z rudarstvom, izpiranjem zlata, transportom soli, lovom in ribolovom. Pod naslovom na desni strani je zanimiva upodobitev zmage habsburške vojske nad turško leta 1664 pri Monoštru (*Szentgotthárd*), ki jo upodablja boj nadangela Mihaela z zmajem. Kartuša s kartografskimi podatki ter z naslovom *Astronomia – Cosmographia – Geographia* je pričakovano bogato okrašena: puta, angela, sferični in zemeljski globus, astrolab, veje z listi, kompas ter številni merilni inštrumenti, ki jih je avtor uporabljal pri izdelavi zemljevida (slika 24). Zanimiva je avtorjeva igra prispodob. Angela držita sliki: levi je avtorjev portret, desni pa portret ribe, ki predstavlja prispodobo za avtorjev priimek, *Vischer* – ribič. Kartuša je podatkovno sestavljena iz dveh delov, oba pa sta v latinskem in nemškem jeziku. V zgornjem delu je v treh vrsticah navedeno grafično merilo zemljevida, v spodnjem delu pa so razloženi kartografski znaki za naselja, gradove, rudnike in drugo (Stopar 2006).

Vischerjev zemljevid Štajerske je za tisti čas natančen pregledni zemljevid velikega merila, kjer so bili poleg prikaza reliefa, navedbe gradov, samostanov ter pomembnejših krajev označena tudi rudna bogastva in druge posebnosti dežele (Stopar 2006).

The map *Styriae Ducatus Fertilissimi Nova Geographica Descriptio* (A New Geographical Description of the Most Fertile Duchy of Styria) was published by the cartographer Georg Matthäus Vischer (1628–1696) in 1678. Vischer negotiated its production for two years with the Styrian provincial estates (*Landstände*) until they finally concluded a contract in 1673. The estates issued a letter of guarantee requesting that the lords of the domains and the towns and market towns to allow Vischer to examine and inspect the relevant territories and to provide him with assistance in the field. After many complications, the map was published five years later (Stopar 2006; 2013).

The map consists of twelve 37.7 × 45 cm sheets, which were engraved on twelve copper plates by Andreas Trost. Altogether the map measures approximately 123 × 135 cm and uses a scale between 1:160,000 and 1:173,000 (Stopar 2006), a fairly large scale for that time, to depict in detail the territory of Styria.

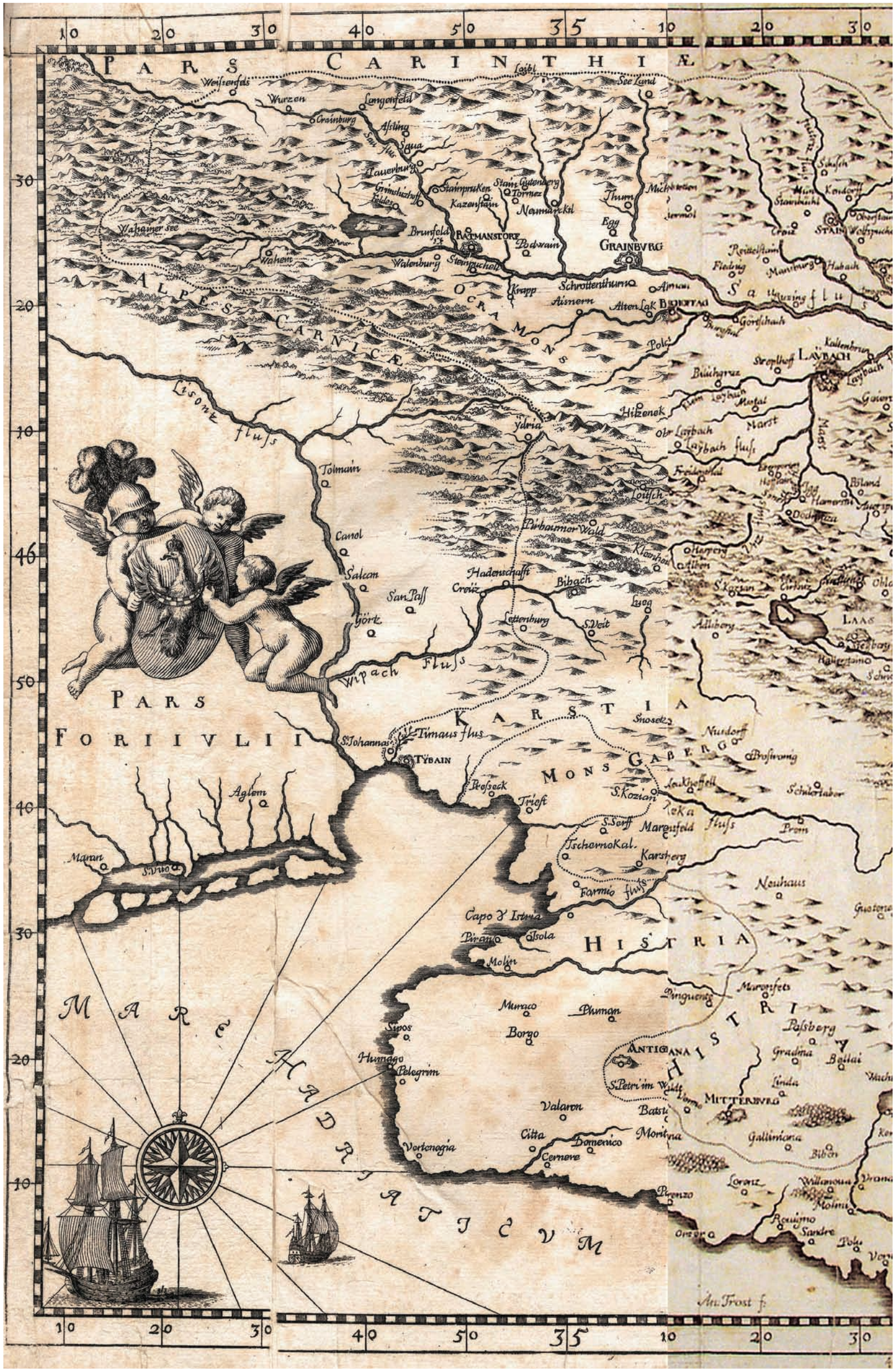
The terrain is represented with shaded molehills or simple elevations (Figure 25) covered in typical vegetation. Roads are not marked, in contrast to major river bridges, which are indicated by a straight white line (Figure 26). A black dotted line is used to mark the border between Styria and Hungary in the east. An important contribution by the cartographer is also geographical names that were not provided on other maps of that time; for example, *Saanboden* (Savinja Valley), *Die Windische Pihel* (Slovenske gorice Hills), *Das Draw Feld* (Drava Plain), *Der Pacher* (Pohorje Mountains; Figure 25), and others (Stopar 2006).

Rich illustrations and insets filling up the empty spaces make a strong visual impression. For example, the picture in the lower left corner shows the area's rich natural resources illustrated by mining, gold prospecting, salt transport, hunting, and fishing. Below the title on the right there is an interesting depiction of the 1664 Habsburg victory over the Ottomans at Szentgotthárd, represented by Archangel Michael fighting a dragon. The cartouche with cartographic information and the title *Astronomia – Cosmographia – Geographia* is expectedly rich in ornamentation, such as putti, two angels, a celestial sphere and terrestrial globe, an astrolabe, branches with leaves, a compass, and many measurement instruments that Vischer used to create the map (Figure 24). It is interesting how the cartographer played with metaphors. Each angel holds a picture: the one on the left holds a portrait of Vischer and the one on the right holds a picture of a fish, which is an allegory of the author's last name, *Vischer* 'fisherman'. The information in the cartouche is composed of two parts, both provided in Latin and German. The upper part presents the map's graphic scale in three lines and the bottom part explains the cartographic symbols for settlements, castles, mines, and so on (Stopar 2006).

Vischer's large-scale overview map of Styria is very accurate for the period in which it was created, also showing the land's mineral resources and other special features in addition to terrain, castles, monasteries, and major towns (Stopar 2006).

Slika 27: Zemljevid *Ducatus Carintiae et Carniolae Cilleiae Comitatus* (Vojvodina Koroška in Kranjska, grofija Celjska) je konec 17. stoletja izdal nizozemski kartograf Frederick de Witt.

Figure 27: The map *Ducatus Carintiae et Carniolae Cilleiae Comitatus* (The Duchy of Carinthia and Carniola, the County of Celje) was published at the end of the seventeenth century by the Dutch cartographer Frederick de Witt.



Slika 28: Zemljevid *Carniolia, Karstia, Histria et Windorum Marchia* (Kranjska, Kras, Istra in Slovenska marka) je izdelal kranjski polihistor Janez Vajkard Valvasor in ga objavil v drugi knjigi dela *Die Ehre deß Hertzogthums Crain* (Slava vojvodine Kranjske) leta 1689.

Figure 28: The map *Carniolia, Karstia, Histria et Windorum Marchia* (Carniola, Karst, Istria, and the Windic March) was produced by the Carniolan polymath Johann Weikhard von Valvasor, who published it in book two of his *Die Ehre deß Hertzogthums Crain* (The Glory of the Duchy of Carniola) in 1689.

Slika 29: Zemljevid *Ducatus Carnioliae Tabula* (Zemljevid vojvodine Kranjske) je Johann van der Bruggen izdelal v začetku 18. stoletja.

Figure 29: *Ducatus Carnioliae Tabula* (Map of the Duchy of Carniola) was produced by Johann van der Bruggen in the early eighteenth century.

Slika 30: Zemljevid *Tabula Ducatus Carnioliae, Vindorum Marchiae et Histriae* (Zemljevid vojvodine Kranjske, Slovenske marke in Istre) je v letih 1714–1724 izdelal nemški kartograf Johann Baptist Homann.

Figure 30: *Tabula Ducatus Carnioliae, Vindorum Marchiae et Histriae* (Map of the Duchy of Carniola, the Windic March, and Istria) was produced by the German cartographer Johann Baptist Homann from 1714 to 1724.

Slika 31: Zemljevid *Ducatus Stiriae Novissima Tabula* (Najnovejši zemljevid vojvodine Štajerske) je v letih 1714–1724 izdelal nemški kartograf Johann Baptist Homann.

Figure 31: *Ducatus Stiriae Novissima Tabula* (The Latest Map of the Duchy of Styria) was produced by the German cartographer Johann Baptist Homann from 1714 to 1724.

Slika 32: Zemljevid *Nova et accurata Carinthiae Ducatus Tabula geographica* (Nov in natančen geografski zemljevid vojvodine Koroške) je v letih 1714–1724 izdelal nemški kartograf Johann Baptist Homann.

Figure 32: *Nova et accurata Carinthiae Ducatus Tabula geographica* (A New and Accurate Geographical Map of the Duchy of Carinthia) was produced by the German cartographer Johann Baptist Homann from 1714 to 1724.

Slika 33: Zemljevid *Ducatus Carnioliae tabula chorographica* (Horografski zemljevid vojvodine Kranjske) je leta 1744 izdal duhovnik Janez Dizma Florjančič pl. Grienfeld.

Figure 33: *Ducatus Carnioliae tabula chorographica* (Chorographic Map of the Duchy of Carniola) was published by the priest Joannes Disma Floriantschitsch de Grienfeld in 1744.

Slika 34: Triglav.
Figure 34: Mount Triglav.

Slika 35: Trst in obala slovenske Istre.
Figure 35: Trieste and the coastline of Slovenian Istria.

Slika 36: Veduta in načrt Ljubljane.
Figure 36: Panorama and layout of Ljubljana.

Slika 37: Bogato okrašena kartuša z naslovom zemljevida.
Figure 37: Richly ornamented cartouche with the map's title.

Slika 38: Ljubljana z okolico.
Figure 38: Ljubljana and the surrounding area.

Zemljevid *Ducatus Carnioliae tabula chorographica* (Horografski zemljevid vojvodine Kranjske) uvrščamo med največje kartografske dosežke med prikazi slovenskega ozemlja v 18. stoletju. Po desetletju terenskega dela ga je izdelal duhovnik Janez Dizma Florjančič pl. Grienfeld (1691–pred 1757), župnik v Šentvidu pri Stični. Zemljevid je sestavljen iz 12 listov velikosti približno 45 × 62 cm. Listi so bili odtisnjeni z bakrenimi ploščami, ki jih je leta 1744 v Ljubljani vrezal Abraham Kaltschmid. Velikost celotnega zemljevida je približno 180 × 188 cm, merilo pa približno 1 : 100.000. Zemljevid na zahodu sega do območja Gorice in Gradišča ob Soči, na vzhodu do Žalca, Brežic in Karlovca, na severu do Trbiža, Železne Kaplje in Slovenj Gradca ter na jugu do Rovinja in Crikvenice (Reisp 1995).

Zemljevid ima številne posebnosti. Najvišjo slovensko goro Triglav (*Mons Terglou Carnioliae*) je avtor izmeril dokaj natančno, saj po njegovem mnenju meri »*1399 pariških šestkratnih čevljev nad ljubljanskim horizontom*«, kar je 3026 metrov. Ime gore »Terglou« (slika 34) je na tem zemljevidu sploh prvič uporabljeno. V zgornjem desnem delu zemljevida je načrt mesta Ljubljane (slika 36) v merilu približno 1 : 5000, ki je za tisti čas zelo natančen in velja za prvi javno objavljen načrt mesta, ki ni za vojaške namene. Nad njim je pregledna veduta Ljubljane z oštevilčenimi posebnostmi, ki so razložene v legendi pod načrtom. V spodnjem desnem delu zemljevida je razkošna kartuša (slika 37) s številnimi podobami, značilnimi za tedanjo Kranjsko ter legenda z grafičnim merilom. Nekatere podrobnosti (na primer slap, soteska, osebe na hoduljah) je avtor črpal iz Valvasorjeve Slave vojvodine Kranjske (Reisp 1995).

Za prikaz reliefa so uporabljene senčene krtine oziroma preproste vzpetine. Z različnimi oblikami krtin je zelo nazorno prikazana reliefna razgibanost ozemlja. Prikaz voda pomaga bralcu pri orientaciji ter zasenči pomanjkanje prikaza poti. Slednje so prikazane izjemoma, izstopa pa cesta z drevoredom med Ljubljano in Škofljico (slika 38). Pri rastju prevladujejo stilizirane podobe dreves z različno gostoto, ki ponazarjajo gozdna zemljišča. Vinogradniška območja so prikazana s podobo vinske trte. Številna zemljepisna imena ne motijo preglednosti zemljevida, poimenovanja pa so verjetno v različici iz obdobja nastanka zemljevida. Pri nekaterih imenih so dodana poimenovanja iz antike (na primer Logatec – *Romanorum Longaticum*). Barvne različice zemljevida poudarijo grafično podobo, ki skupaj z velikostjo zemljevida na bralca naredi močan vtis.

Zemljevid predstavlja najkakovostnejši in najpopolnejši zemljevid Kranjske tega obdobja, odlikujejo pa ga prikaz oblikovanosti površja, berljivost ter slikovni in besedilni dodatki.

Originalne bakrene plošče hrani Narodni muzej Slovenije. Zemljevid je bil do konca 18. stoletja še dvakrat ponatisnjen. Pri izdaji iz leta 1799 so mu bile dodane nekatere prometnice, naselja in poimenovanja, kar je razvidno iz ohranjenih bakrenih plošč.

The map *Ducatus Carnioliae tabula chorographica* (Chorographic Map of the Duchy of Carniola) ranks among the greatest cartographic achievements in terms of eighteenth-century maps of Slovenian territory. It was produced by Joannes Disma Floriantschitsch de Grienfeld (born 1691, died before 1757), a priest at Šentvid pri Stični, following a decade of field research. The map is composed of twelve sheets measuring approximately 45 × 62 cm, printed with copperplates engraved by Abraham Kaltschmid in 1744 in Ljubljana. The entire map measures approximately 180 × 188 cm and uses a scale of approximately 1:100,000. It extends to Gorizia and Gradisca d'Isonzo in the west, Žalec, Brežice, and Karlovac in the east, Tarvisio, Eisenkappel, and Slovenj Gradec in the north, and Rovinj and Crikvenica in the south (Reisp 1995).

The map has many special features. Floriantschitsch measured the highest Slovenian mountain, Mount Triglav (*Mons Terglou Carnioliae*), fairly accurately, at »1,399 Parisian fathoms above the Ljubljana horizon,« which equals 3,026 m. Triglav's name »*Terglou*« (Figure 34) is provided here for the first time. The right upper part of the map features the layout of Ljubljana (Figure 36) at a scale of approximately 1:5,000, which is very accurate for that time and is considered the first plan of the city published for non-military purposes. Above the layout is a clear panorama of Ljubljana with numbered sites explained in the legend below the plan. The bottom right corner of the map features a richly ornamented cartouche (Figure 37) with various details typical of Carniola at that time and a legend with a graphic scale. Certain details (e.g., a waterfall, a canyon, and individuals on stilts) were taken from Valvasor's *Glory of the Duchy of Carniola* (Reisp 1995).

The terrain is indicated with shaded molehills or simple elevations. Various shapes of molehills present the territory's dynamic terrain very clearly. The watercourses depicted help readers find their bearings and overshadow the absence of roads. These are shown only rarely, with the tree-lined road between Ljubljana and Škofljica standing out prominently (Figure 38). In terms of vegetation, stylized trees of various density predominate, illustrating wooded land. Winegrowing regions are depicted with vines. The large quantity of geographical names does not affect the map's clarity, with the names probably provided in the form used during the period in which the map was created. Forms used in Antiquity are added to some (e.g., *Romanorum Longaticum* for Logatec). The various colors used emphasize the map's graphic design, which, together with the map's size, make a strong impression on the reader.

This is the highest-quality and most complete map of Carniola of that time, distinguished by its clear representation of landforms, good readability, and rich pictorial and textual insets.

The original copperplates are kept at the National Museum of Slovenia. By the end of the eighteenth century, the map was reprinted twice. Certain roads, settlements, and names were added to its 1799 edition, which is evident from the copperplates preserved.

Slika 39: Zemljevid *Partie Méridionale du Cercle d'Autriche, qui comprend La Basse Partie du Duché de Stirie, Le Duché de Carinthie, divisé en haute et basse, Le Duché de Carniole* . . . (Južni del Avstrije, ki obsega spodnji del vojvodine Štajerske, vojvodino Koroško, ki se deli na zgornjo in spodnjo, vojvodino Kranjsko . . .) je izšel v Franciji leta 1752. Ni povsem jasno, ali ga je izdal Gilles Robert de Vaugondy ali njegov sin.

Figure 39: The map *Partie Méridionale du Cercle d'Autriche, qui comprend La Basse Partie du Duché de Stirie, Le Duché de Carinthie, divisé en haute et basse, Le Duché de Carniole* . . . (Southern Part of Austria, Encompassing the Lower Part of the Duchy of Styria, the Duchy of Carinthia Divided into Upper and Lower Carinthia, the Duchy of Carniola . . .) was published in France in 1752. It is not entirely clear whether it was published by Gilles Robert de Vaugondy or his son.

Slika 40: Prva habsburška vojaška izmera *Josephinische Landesaufnahme* (jožefinska deželna izmera oziroma jožefinski vojaški zemljevid) je bila za večino slovenskega ozemlja (območje Notranje Avstrije) izvedena med letoma 1784 in 1787, za območje Prekmurja pa med letoma 1782 in 1785. Ima veliko merilo 1 : 28.800. Izsek prikazuje območje med Senožečami in Postojno s Pivško kotlino.

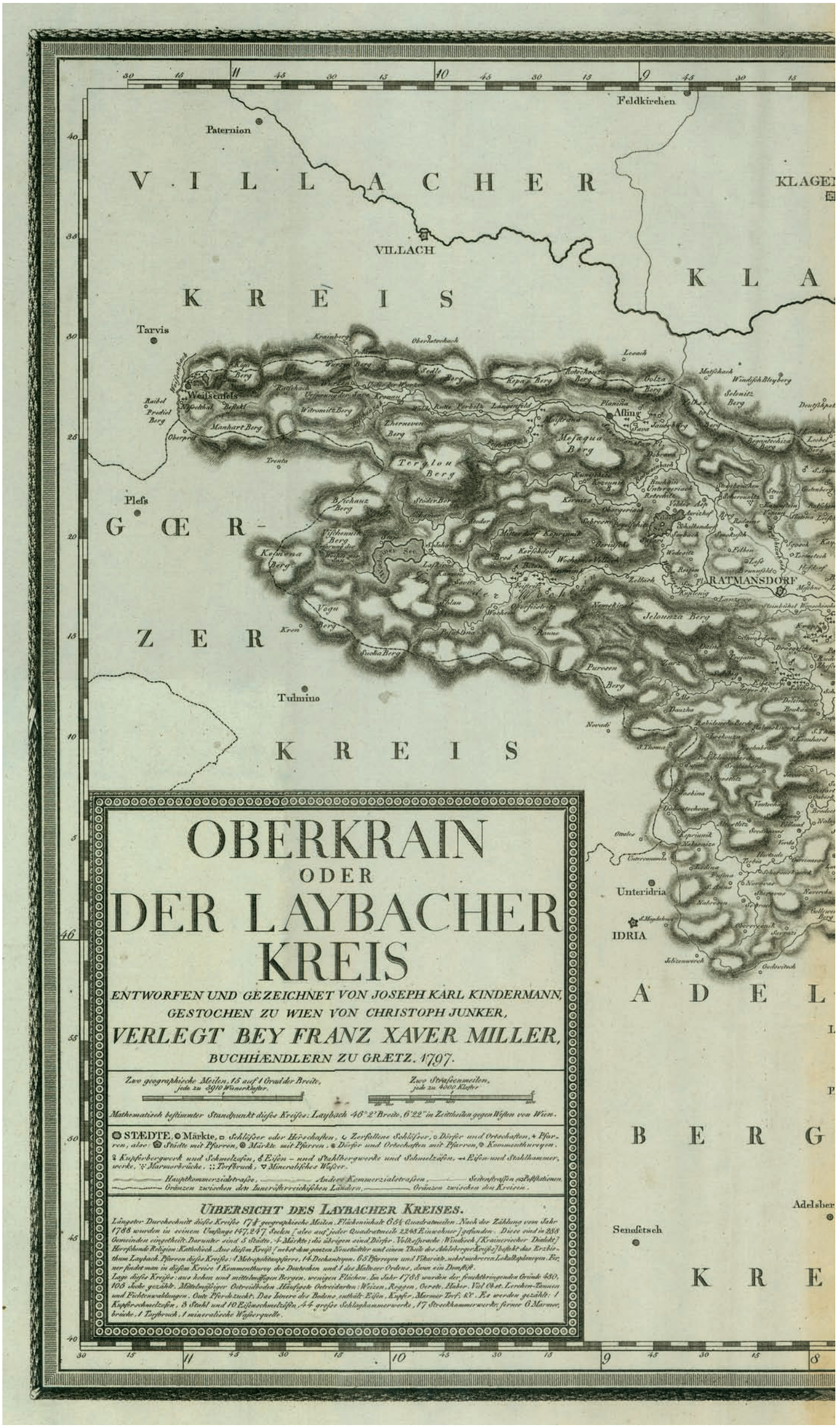
Figure 40: The first Habsburg military survey, called *Josephinische Landesaufnahme* (the Josephinian Land Survey), was conducted between 1784 and 1787 for most of the Slovenian territory (part of Inner Austria) and between 1782 and 1785 for Prekmurje. It used a large scale of 1:28,800. The detail presented here covers the area between Senožeče (Senosich) and Postojna (Adelsperg) with the Pivka Basin.

Slika 41: Izrez zemljevida *Mappa Litho-Hydrographica Nationis Slavicae* (Litološko-hidrografski zemljevid slovanskih narodov), ki ga je izdelal idrijski zdravnik in naravoslovec Baltazar Hacquet in ga leta 1778 objavil v delu Oriktografija Kranjske.

Figure 41: Part of *Mappa Litho-Hydrographica Nationis Slavicae* (Lithological and Hydrological Map of the Slavic Nations) produced by the Idrija physician and natural scientist Belsazar Hacquet, who published it in his Oryctographia Carniolica (Oryctography of Carniola) in 1778.

Slika 42: Zemljevid, sicer brez naslova, a poimenovan *Krainska deschela* (Kranjska), je delo kartografa Franca Ksaverja Barage in je nastal leta 1778. Pri nastajanju je sodeloval Baltazar Hacquet, ki je zemljevid vključil v delo Oriktografija Kranjske.

Figure 42: A map without a title but named *Krainska deschela* (Carniola) was produced by the cartographer Franz Xaver Baraga in 1778. It was edited by Belsazar Hacquet, who included it in his work *Oryctographia Carniolica* (Oryctography of Carniola).



Slika 43: Zemljevid *Oberkrain oder der Laybacher Kreis* (Gorenjska ali Ljubljansko okrožje) je habsburški kartograf Joseph Karl Kindermann leta 1797 vključil v *Atlas von Inneröesterreich - Die Provinz Inner-Oesterreich* (Atlas notranjeavstrijskih dežel).

Figure 43: The Habsburg cartographer Joseph Karl Kindermann included the map *Oberkrain oder der Laybacher Kreis* (Upper Carniola or the Ljubljana District) in his *Atlas von Innerösterreich – Die Provinz Inner-Oesterreich* (Atlas of Inner Austria) in 1797.

Slika 44: Zemljevid *Charte von Kaernthen und Krain, nebst den Grafschaften Görz und Gradiska und dem Gebiethe von Triest* (Zemljevid Koroške in Kranjske, skupaj z grofijo Goriško in Gradiško ter območjem Trsta) je leta 1803 izdal habsburški kartograf Joseph Karl Kindermann.

Figure 44: *Charte von Kaernthen und Krain, nebst den Grafschaften Görz und Gradiska und dem Gebiethe von Triest* (Map of Carinthia and Carniola, Together with the Counties of Gorizia and Gradisca, and the Trieste Area) was published in 1803 by the Habsburg cartographer Joseph Karl Kindermann.

Slika 45: *Topographisch-militairische Charte von Teutschland* (Vojaškotopografski zemljevid Nemčije) je med letoma 1807 in 1814 izdajal Geografski inštitut v Weimarju. Prikazan je list številka 200, ki prikazuje območje med Ljubljano in Novim mestom ter je eden od skupno 204 listov zemljevida.

Figure 45: *Topographisch-militairische Charte von Teutschland* (Topographic-Military Map of Germany) was published by the Weimar Geographical Institute from 1807 to 1814. Presented here is sheet no. 200 (of a total of 204 sheets) showing the area between Ljubljana (Laybach) and Novo mesto (Neustädtl).

Slika 46: Izrez iz zemljevida *Charte von dem Königreiche Illyrien und dem Herzogthume Steyermark* (Zemljevid Ilirskega kraljestva in vojvodine Štajerske), ki ga je leta 1818 izdal saški kartograf Carl Ferdinand Weiland. Prikazana je izdaja iz leta 1830.

Figure 46: Part of *Charte von dem Königreiche Illyrien und dem Herzogthume Steyermark* (Map of the Kingdom of Illyria and the Duchy of Styria, 1830 edition), originally published in 1818 by the Saxon cartographer Carl Ferdinand Weiland.

Slika 47: Franciscejski kataster (*Franziszeischer Kataster*) je za večino slovenskega ozemlja (z izjemo Prekmurja) nastajal med letoma 1818 in 1828. Izsek prikazuje območje naselja Golobinjek pri Novem mestu (list N298A04). Ima zelo veliko merilo 1 : 2880.

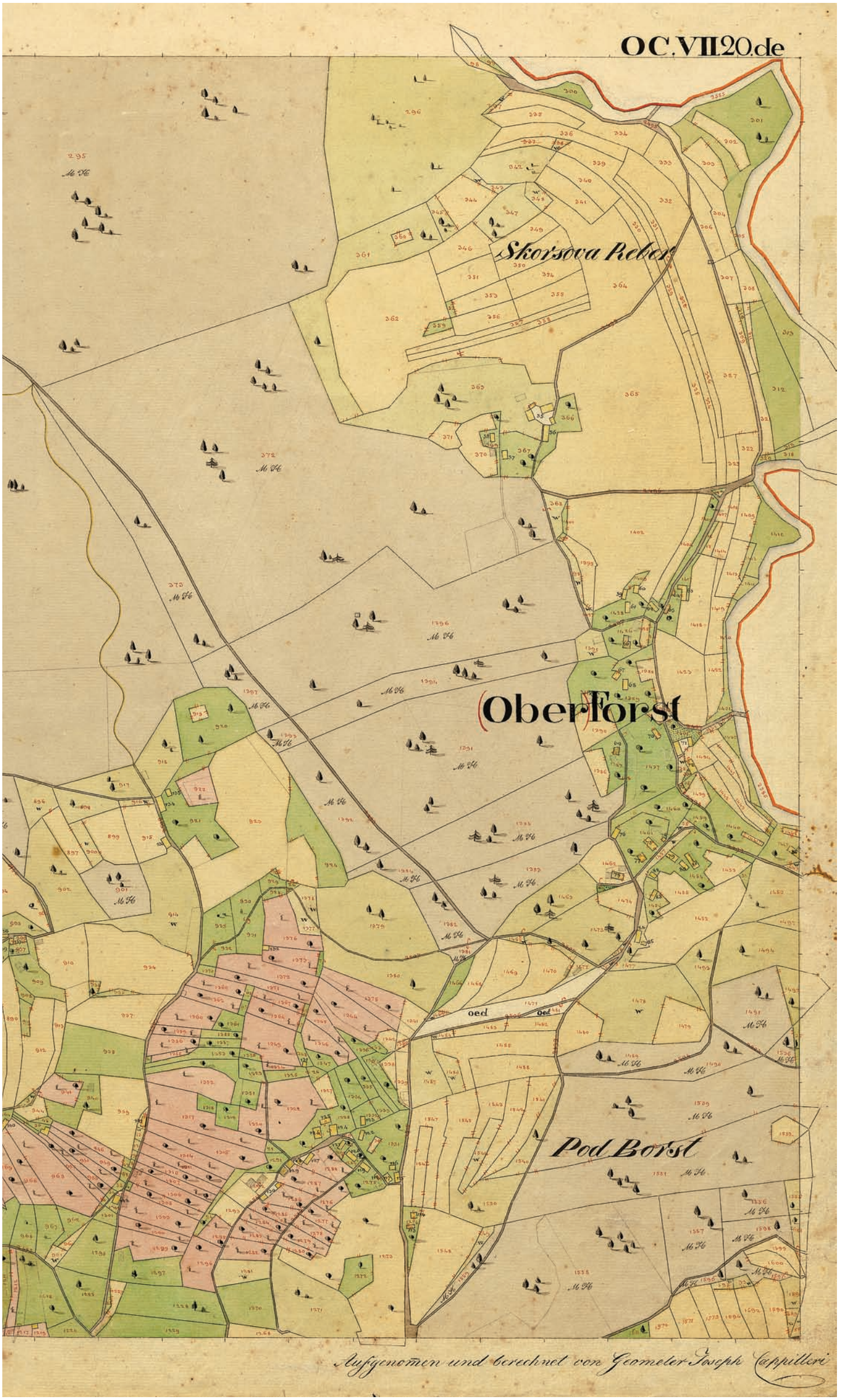


Figure 47: *Franziszeischer Kataster* (the Franciscan Cadaster) was created between 1818 and 1828 for most Slovenian territory, except Prekmurje. The detail shows the village Globinjek (Taubenberg) by Novo mesto (Sheet N298A04), using a very large scale of 1:2,880.

Slika 48: Zemljevid *Karte vom Herzogthume Krain* (Zemljevid vojvodine Kranjske) je leta 1832 izdelal habsburški vojaški kartograf Gottfried Loschan.

Figure 48: *Karte vom Herzogthume Krain* (Map of the Duchy of Carniola) was produced by the Habsburg military cartographer Gottfried Loschan in 1832.

Slika 49: Zemljevid *(Special) Karte des Königreichs Illyrien und des Herzogthums Steyermark nebst dem Königlich Ungarischen Littorale* (Zemljevid Kraljevine Ilirije in vojvodine Štajerske skupaj s Primorjem kraljevine Ogrske) je leta 1834 izdal Avstrijski štab glavnega kvartirnega mojstra na Dunaju. List 18 prikazuje območje med Lovrencem na Pohorju in Ptujem ter je eden od 36 listov zemljevida.

Figure 49: *(Special) Karte des Königreichs Illyrien und des Herzogthums Steyermark nebst dem Königlich Ungarischen Littorale* (Map of the Kingdom of Illyria and the Duchy of Styria with the Hungarian Littoral) was published in 1834 by the Austrian Quartermaster General Staff in Vienna. Sheet eighteen shows the area between Lovrenc na Pohorju (St. Lorenzen) and Ptuj (Pettau) and is one of the map's thirty-six sheets.

Slika 50: Zemljevid *General-Karte des Königreichs Illyrien nebst dem Königlich Ungarischen Littorale* (Splošni zemljevid Kraljevine Ilirije skupaj s Primorjem kraljevine Ogrske) je leta 1843 izdal Vojaški geografski inštitut na Dunaju.

Figure 50: *General-Karte des Königreichs Illyrien nebst dem Königlich Ungarischen Littorale* (General Map of the Kingdom of Illyria with the Hungarian Littoral) was published in 1843 by the Military Geographic Institute in Vienna.

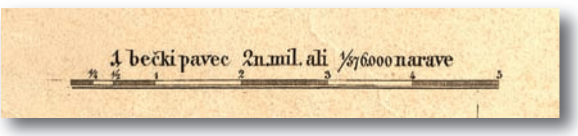
Slika 51: Zemljevid *Special-Karte des Herzogthums Krain* (Specialni zemljevid vojvodine Kranjske) je med letoma 1844 in 1846 izdelal kranjski botanik Henrik Freyer. List prikazuje območje Ljubljane.

Figure 51: *Special-Karte des Herzogthums Krain* (Detailed Map of the Duchy of Carniola) was produced by the Carniolan botanist Heinrich Freyer from 1844 to 1846. The sheet shows the Ljubljana area.

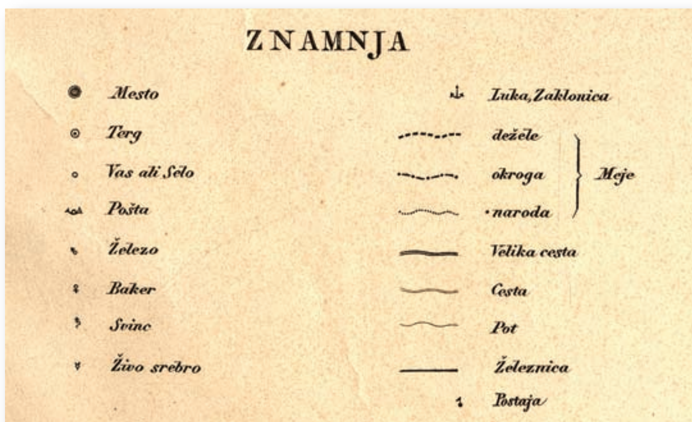
Slika 52: *Zemljovid slovenske dežele in pokrajin* je leta 1852, a z letnico 1853, izdal gospodarstvenik Peter Kozler.

Figure 52: *Zemljovid slovenske dežele in pokrajin* (Map of Slovenian Territory and Regions) was published by the businessman Peter Kosler in 1852. The year printed on the map is 1853.

Slika 53: S temno črto je na zemljevidu označena slovenska etnična meja, ki na Kočevskem zamejuje območje poseljeno s kočevskimi Nemci. Zemljepisna imena so tudi tu v veliki večini zapisana v slovenščini.
Figure 53: The dark line on the map marks the Slovenian ethnic border. In the Kočevje region the line marks the area settled by Gottschee Germans. The geographical names are also mostly written in Slovenian here.



Slika 54: Grafično, opisno in številčno merilo.
Figure 54: Graphic, verbal, and representative fraction scales.



Slika 55: Legenda v slovenskem jeziku.
Figure 55: Legend in Slovenian.

Slika 56: Deželne meje Kranjske na Gorenjskem.
Figure 56: Provincial borders of Carniola in Upper Carniola.

Zemljovid slovenske dežele in pokrajin je leta 1852 izdal gospodarstvenik Peter Kozler (1824–1879). Na prvi izdaji je sicer navedena letnica 1853, ko naj bi stekla prodaja.

Zemljevid prikazuje Kranjsko, Koroško, avstrijsko Primorje, (južno) Štajersko do Gradca, Prekmurje, Beneško Slovenijo in del Hrvaške. Meri približno 50 × 54 cm, v tiskarske plošče pa ga je vgraviral Anton Knorr. Ima merilo 1 : 576.000, ki je pregledno in prikazano v grafični, številski in opisni obliki (slika 54), kar je bila takrat redkost.

Za prikaz reliefa je uporabljeno črtkanje. Legenda (slika 55) je razumljiva, manjka pa kartografski znak za tekoče vode, saj je reke mestoma težko ločiti od železnice in poti. Majhno merilo in številna zemljepisna imena zmanjšujejo preglednost zemljevida, zato se je avtor pri ponatisih odločil za barvanje meja in dežel (Kranjec 1964).

S pripravami za izdelavo zemljevida je Kozler začel leta 1848, z namenom prikazati Zedinjeno Slovenijo, ki je tega leta postala slovenski politični program (Kranjec 1964). Sistematično je zbiral in preučeval zemljepisno, narodopisno in statistično gradivo. Oprl se je tudi na znance, ki so poznali krajevno okolje ter mu pošiljali podatke in sezname krajevnih imen. Vodilo so mu bile programske zahteve ter želja po združitvi vseh Slovencev v eno entiteto (Kordiš in Škufca 1996).

Proti koncu leta 1852 je Kozler v časnikih objavil možnost predčasnega naročila zemljevida, ki bi izšel v začetku leta 1853. Konec leta 1852 so zemljevid že pričeli tiskati, a ga je takratna oblast, ki je delovala pod vplivom Bachovega absolutizma, zaradi poudarjanja slovenstva prepovedala. Zaplenili so tiskarski plošči in vseh 422 že natisnjenih zemljevidov, Kozlerja pa obsodili veleizdaje. Sporen je bil naslov zemljevida, njegove meje ter uporaba izključno slovenskega jezika. Kozler je bil po nekaj mesecih oproščen, vse zaseženo pa so mu na njegovo posebno prošnjo vrnili leta 1856. Zaradi političnih zapletov z objavo je zemljevid v javnost prvič prišel šele leta 1861. Zemljevid je zaradi svojega nacionalnega naboja ter kakovostne kartografske upodobitve izšel v številnih ponatisih. Druga in tretja izdaja sta izšli leta 1864, četrta leta 1871, peta leta 1975, šesta leta 1978 (Bohinec 1975; Kordiš in Škufca 1996), nato pa so bili v letih 1992, 1993, 1995, 1999, 2002, 2003, 2012 in 2013 izdani ponatisi in faksimile nekaterih izdaj (Kordiš 2014).

Najpomembnejši dodatek, ki je bil načrtovan že za leto 1853, dodan pa pri drugi izdaji leta 1864, je bil *Imenik mest, tergov in krajev*, ki je dolgo predstavljal edini seznam krajev za celotno slovensko etnično ozemlje.

Kozlerjev zemljevid je prvi zemljevid slovenskega etničnega ozemlja, kjer so imena krajev napisana izključno v slovenskem jeziku (slika 53), prav tako pa je prvič na zemljevidu navedeno slovensko ime najvišje slovenske gore Triglav v današnji obliki (slika 56).

Pomena zemljevida se je Kozler zavedel in obljubil, da ga bo skupaj z »Imenikom« podaril članom leta 1864 ustanovljene Slovenske matice. Leta 1865 so zemljevid prejeli vsi njeni člani, »Imenik« pa vsi ustanovni člani (Kranjec 1964).

Zemljovid slovenske dežele in pokrajin (Map of Slovenian Territory and Regions) was published in 1852 by the businessman Peter Kosler (1824–1879). The year printed on the map's first edition is 1853, when the map's distribution was planned to commence.

Depicted on the map are Carniola, Carinthia, Austrian Littoral, (southern) Styria up to Graz, Prekmurje, Benecia (Friulian Slavia), and part of Croatia. The map measures approximately 50 × 54 cm and was engraved on copperplates by Anton Knorr. It uses a scale of 1:576,000, which is presented in graphic, representative fraction, and verbal form (Figure 54), a rarity at that time.

Hachures are used to represent the terrain. The legend (Figure 55) is comprehensible but does not include a cartographic symbol for running waters, which would be helpful considering that in places rivers are difficult to distinguish from the railway or roads. The map's small scale and a large quantity of geographical names decrease its clarity, which is why Kosler decided to color the borders and individual regions in later reprinted editions (Kranjec 1964).

Kosler began working on the map in 1848 with the aim of presenting the territory of United Slovenia, the ultimate goal of the Slovenian political program of the same name adopted that year (Kranjec 1964). He systematically collected and studied geographical, ethnographic, and statistical materials, and also relied on acquaintances who knew the local environment well and sent him information and lists of place names. His efforts were guided by the demands defined in the United Slovenia program and a desire to unite all Slovenians into one entity (Kordiš and Škufca 1996).

Toward the end of 1852, Kosler announced in the newspapers that it was possible to pre-order the map, which was planned to be published in 1853. It already began being printed at the end of 1852, but the authorities, acting under the influence of Bach's absolutism, banned the map due to its emphasis on Slovenian identity. The printing plates and all the 422 maps already printed were confiscated, and Kosler was charged with high treason. What was problematic was the map's title, its borders, and the exclusive use of Slovenian. A few months later, Kosler was acquitted of all charges and all the confiscated items were returned to him in 1856 following his special request. Because of the political complications surrounding its publication, the map only became available to the public in 1861. Due to its nationalist charge and high-quality cartographic representation, it was reprinted many times. The second and third editions were published in 1864, the fourth in 1871, the fifth in 1975, and the sixth in 1978 (Bohinec 1975; Kordiš and Škufca 1996), followed by other reprints and facsimiles of selected editions in 1992, 1993, 1995, 1999, 2002, 2003, 2012, and 2013 (Kordiš 2014).

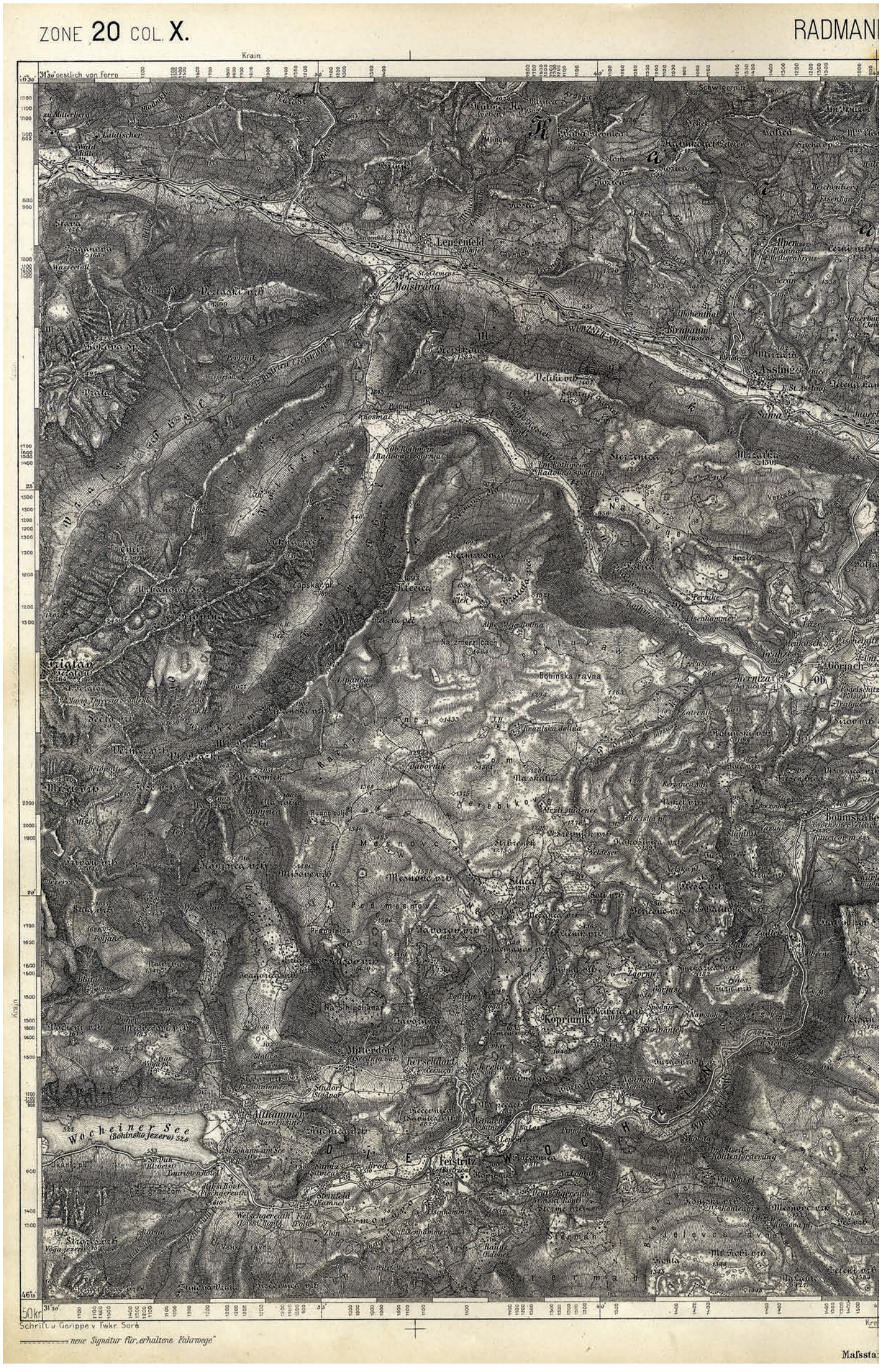
The most important appendix already planned for the 1853 edition, but only added to the second edition published in 1864, was the *Imenik mest, tergov in krajev* (Index of Towns, Market Towns, and Villages). For many years, this was the only index of toponyms covering all of Slovenian ethnic territory.

Kosler's map is the first map of Slovenian ethnic territory with place names provided exclusively in Slovenian (Figure 53). In addition, this is the first map on which the name of Slovenia's highest peak, Mount Triglav, appears with today's Slovenian spelling (Figure 56).

Kosler was aware of the map's importance and promised to donate it, together with its index, to the members of the Slovenian Society founded in 1864. In 1865, the map was received by all the members, and the index was donated to the founding members only (Kranjec 1964).

Slika 57: Izrez zemljevida *Völker-, Kreis-, Gerichts-, Eisenbahn- und Post- Karte der Herzogthümer Steiermark, Kärnthen, Krain, der Grafschaften Görz, Gradisca, Istrien und der Reichstadt Triest* (Etnični, okrožni, sodni, železniški in poštni zemljevid vojvodin Štajerske, Koroške, Kranjske, grofij Goriška, Gradiška, Istra in cesarskega mesta Trst), ki ga je v drugi polovici 19. stoletja na Dunaju izdal kartograf Franz Raffelsperger.

Figure 57: Part of *Völker-, Kreis-, Gerichts-, Eisenbahn- und Post- Karte der Herzogthümer Steiermark, Kärnthen, Krain, der Grafschaften Görz, Gradisca, Istrien und der Reichstadt* (Ethnic, District, Court, Railway, and Postal Map of the Duchies of Styria, Carinthia, Carniola, the Counties of Gorizia, Gradisca, Istria, and the Imperial Town of Trieste), which was published by Franz Raffelsperger in the second half of the nineteenth century in Vienna.



Slika 58: *Specialkarte der österreichisch-ungarischen Monarchie* (Specialni zemljevidi Avstro-Ogrske monarhije), ki ga je od leta 1873 izdajal Vojaški geografski inštitut na Dunaju. Za celotno monarhijo je bilo izdelanih 715 listov v merilu 1 : 75.000. List prikazuje območje Radovljice.

Figure 58: *Specialkarte der österreichisch-ungarischen Monarchie* (Detailed Map of Austria-Hungary) was published from 1873 onward by the Military Geographic Institute in Vienna. A total of 715 sheets at a scale of 1:75,000 were produced for the entire monarchy. The sheet shows the Radovljica (Radmannsdorf) area.

Slika 59: *Zemljevid Avstrije* je bil izdan leta 1869 in je eden prvih zemljevidov prvega atlasa sveta v slovenskem jeziku, imenovanega Atlant.

Figure 59: *Zemljevid Avstrije* (Map of Austria) was published in 1869 and is one of the first maps in *Atlant*, the first world atlas published in Slovenian.

Slika 60: *Zemljevid slovenskega ozemlja* je leta 1921 izdala Slovenska matica.

Figure 60: *Zemljevid slovenskega ozemlja* (Map of Slovenian Territory) was published in 1921 by the Slovenian Society.

6 Seznam zemljevidov slovenskega ozemlja / List of Maps of Slovenian Territory

ORIGINALNI NASLOV / ORIGINAL TITLE	SLOVENSKI PREVOD / SLOVENIAN TRANSLATION	ANGLEŠKI PREVOD / ENGLISH TRANSLATION
*Istra**	*Istra**	*Istria**
Descriptio totius Illyridis	Opis celotne Ilirije	Description of All Illyria
Ducatus Carniolae et Histriae una cum Marcha Windorum	Vojvodina Kranjska in Istra s Slovensko marko	The Duchy of Carniola and Istria with the Windic March
Ducatus Carniolae una cum Marchia Windorum	Vojvodina Kranjska s Slovensko marko	The Duchy of Carniola with the Windic March
Schlavoniae, Croatiae, Carniae, Istriae, Bosniae, finitimarumque regionum nova descriptio	Novi prikaz Slavonije, Hrvaške, Kranjske, Istre, Bosne in sosednjih pokrajin	A New Depiction of Slavonia, Croatia, Carniola, Istria, Bosnia, and Neighboring Regions
Illyricum	Ilirija	Illyria
Forum Iulium, Karstia, Carniola, Histria et Windorum Marchia	Furlanija, Kras, Kranjska, Istra in Slovenska marka	Friuli, Karst, Carniola, Istria, and the Windic March
Carniolae Chaziolae Q3 Ducatus nec non et Goritiae Comitatus . . .	Vojvodina Kranjska in Kočevsko kakor tudi grofija Goriška . . .	The Duchy of Carniola and the Kočevje Area, as Well as the County of Gorizia . . .
Istria olim Iapidia	Istra, nekdanja Japidija	Istria, the Former Land of the Iapydes
Hertzogthūber Steyer, Karnten, Krain, & c./Duchés de Stirie, Carinthie, Carniole . . .	Vojvodine Štajerska, Koroška in Kranjska . . .	The Duchies of Styria, Carinthia, and Carniola . . .
Carniola, Cilia comitatus, et Windorum Marchia	Kranjska, Celjska grofija in Slovenska marka	Carniola, the County of Celje, and the Windic March
Styriae Ducatus Fertilissimi Nova Geographica Descriptio	Novi geografski opis nadvse rodovitne vojvodine Štajerske	A New Geographical Description of the Most Fertile Duchy of Styria
Ducatus Carintiae et Carniolae Cilleiae Comitatus	Vojvodina Koroška in Kranjska, grofija Celjska	The Duchy of Carinthia and Carniola, the County of Celje
Carniolia, Karstia, Histria et Windorum Marchia	Kranjska, Kras, Istra in Slovenska marka	Carniola, Karst, Istria, and the Windic March
Ducatus Carnioliae Tabula	Zemljevid vojvodine Kranjske	Map of the Duchy of Carniola
Tabula Ducatus Carnioliae, Vindorum Marchiae et Histriae	Zemljevid vojvodine Kranjske, Slovenske marke in Istre	Map of the Duchy of Carniola, the Windic March, and Istria
Ducatus Stiriae Novissima Tabula	Najnovejši zemljevid vojvodine Štajerske	The Latest Map of the Duchy of Styria
Nova et accurata Carinthiae Ducatus Tabula geographica	Nov in natančen geografski zemljevid vojvodine Koroške	A New and Accurate Geographical Map of the Duchy of Carinthia
Ducatus Carnioliae tabula chorographica	Horografski zemljevid vojvodine Kranjske	Chorographic Map of the Duchy of Carniola
Partie Méridionale du Cercle d'Autriche, qui comprend La Basse Partie du Duché de Stirie, Le Duché de Carinthie, divisé en haute et basse, Le Duché de Carniole, divise en haute, basse, moyenne et inter.[e] Carniole, et l'Istrie Impériale	Južni del Avstrije, ki obsega spodnji del vojvodine Štajerske, vojvodino Koroško, ki se deli na zgornjo in spodnjo, vojvodino Kranjsko, razdeljeno v zgornjo, spodnjo, srednjo in notranjo Kranjsko, ter cesarstvo Istre	Southern Part of Austria, Encompassing the Lower Part of the Duchy of Styria, the Duchy of Carinthia Divided into Upper and Lower Carinthia, the Duchy of Carniola Divided into Upper, Lower, Central, and Inner Carniola, and Imperial Istria
Josephinische Landesaufnahme	Jožefinska deželna izmera (jožefinski vojaški zemljevid)	Josephinian Land Survey
Mappa Litho-Hydrographica Nationis Slavicae	Litološko-hidrografski zemljevid slovanskih narodov	Lithological and Hydrological Map of the Slavic Nations
Krainska deschela*	Kranjska*	Carniola*
Oberkrain oder der Laybacher Kreis	Gorenjska ali Ljubljansko okrožje	Upper Carniola or the Ljubljana District
Charte von Kaernthen und Krain, nebst den Grafschaften Görz und Gradiska und dem Gebiethe von Triest	Zemljevid Koroške in Kranjske, skupaj z grofijo Goriško in Gradiško ter območjem Trsta	Map of Carinthia and Carniola, Together with the Counties of Gorizia and Gradisca, and the Trieste Area
Topographisch-militairische Charte von Teutschland	Vojaškotopografski zemljevid Nemčije	Topographic-Military Map of Germany
Charte von dem Königreiche Illyrien und dem Herzogthume Steyermark	Zemljevid Ilirskega kraljestva in vojvodine Štajerske	Map of the Kingdom of Illyria and the Duchy of Styria
Franziszeischer Kataster	Franciscejski kataster	Franciscan Cadaster
Karte vom Herzogthume Krain	Zemljevid vojvodine Kranjske	Map of the Duchy of Carniola
(Special) Karte des Königreichs Illyrien und des Herzogthums Steyermark nebst dem Königlich Ungarischen Littorale	Zemljevid Kraljevine Ilirije in vojvodine Štajerske skupaj s Primorjem kraljevine Ogrske	Map of the Kingdom of Illyria and the Duchy of Styria with the Hungarian Littoral
General-Karte des Königreichs Illyrien nebst dem Königlich Ungarischen Littorale	Splošni zemljevid Kraljevine Ilirije skupaj s Primorjem kraljevine Ogrske	General Map of the Kingdom of Illyria with the Hungarian Littoral
Special-Karte des Herzogthums Krain	Specialni zemljevid vojvodine Kranjske	Detailed Map of the Duchy of Carniola
Zemljovid slovenske dežele in pokrajin		Map of Slovenian Territory and Regions
Völker-, Kreis-, Gerichts-, Eisenbahn- und Post- Karte der Herzogthümer Steiermark, Kärnthen, Krain, der Grafschaften Görz, Gradisca, Istrien und der Reichstadt Triest	Etnični, okrožni, sodni, železniški in poštni zemljevid vojvodin Štajerske, Koroške, Kranjske, grofij Goriška, Gradiška, Istra in cesarskega mesta Trst	Ethnic, District, Court, Railway, and Postal Map of the Duchies of Styria, Carinthia, Carniola, the Counties of Gorizia, Gradisca, Istria and the Imperial Town of Trieste
Specialkarte der österreichisch-ungarischen Monarchie	Specialni zemljevidi Avstro-Ogrske monarhije	Detailed Map of Austria-Hungary
Zemljevid Avstrije		Map of Austria
Zemljevid slovenskega ozemlja		Map of Slovenian Territory

* Zemljevid nima originalnega naslova, naslov je opisen. / The map does not have the original title, the title is descriptive.

List of Maps of Slovenian Territory

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Collection Felbar 2020b: de Witt, Frederick: Karta Kranjske, Štajerske i Celjske županije. Internet: http://www.felbar.com/hr/map/autors/a-e/page/1/view/125 (14. 1. 2020).

Collection Felbar 2020c: van der Bruggen, Johann: Karta vojvodine Kranjske. Internet: http://www.felbar.com/hr/map/autors/u-z/page/1/view/306 (14. 1. 2020).

Collection Felbar 2020d: Cantelli da Vignolla, Giacomo: karta Štajerske, Kranjske i Koruške. Internet: http://www.felbar.com/hr/map/autors/a-e/page/4/view/225 (5. 2. 2020).

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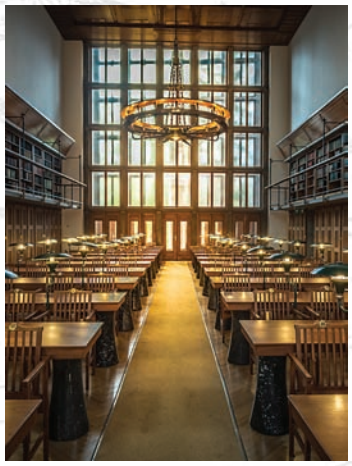
Inštitut je leta 1946 ustanovila Slovenska akademija znanosti in umetnosti in ga leta 1976 poimenovala po akademiku dr. Antonu Meliku (1890–1966). Od leta 1981 je sestavni del Znanstvenoraziskovalnega centra Slovenske akademije znanosti in umetnosti (ZRC SAZU). Leta 2002 sta se inštitutu priključila Inštitut za geografijo, ki je bil ustanovljen leta 1962, in Zemljepisni muzej Slovenije, ustanovljen leta 1946. Ima oddelke za fizično geografijo, humano geografijo, regionalno geografijo, naravne nesreče, varstvo okolja, geografski informacijski sistem in tematsko kartografijo, zemljepisno knjižnico, fizičnogeografski laboratorij ter zemljepisni muzej. V njem je sedež Komisije za standardizacijo zemljepisnih imen Vlade Republike Slovenije. Ukvarja se predvsem z geografskimi raziskavami Slovenije in njenih pokrajin ter pripravo temeljnih geografskih knjig o Sloveniji. Sodeluje pri številnih domačih in mednarodnih projektih, organizira znanstvena srečanja, izobražuje mlade raziskovalce in izmenjuje znanstvenike. Izdaja znanstveno revijo Acta geographica Slovenica/Geografski zbornik ter znanstvene knjižne zbirke Geografija Slovenije, Georitem in CAPACities. V sodih letih izdaja knjižno zbirko GIS v Sloveniji, v lihih letih knjižno zbirko Regionalni razvoj, vsako tretje leto pa knjižno zbirko Naravne nesreče.

The institute was established in 1946 by the Slovenian Academy of Sciences and Arts, which in 1976 named it after the academy member Anton Melik (1890–1966). Since 1981, it has been part of the Research Centre of the Slovenian Academy of Sciences and Arts (ZRC SAZU). In 2002, it was joined by the Institute of Geography, founded in 1962, and the Slovenian Geographical Museum, founded in 1946. The institute comprises departments for physical geography, human geography, regional geography, natural disasters, environmental protection, geographic information systems, and thematic cartography, a geographical library, a physical geography laboratory, and a geographical museum. It is the seat of the Slovenian Government's Committee for the Standardization of Geographical Names. The institute primarily engages in geographical studies of Slovenia and its landscapes, and it produces seminal geographical volumes on Slovenia. It takes part in many Slovenian and international projects, holds research conferences, trains junior researchers, and participates in researcher exchange programs. It publishes the journal *Acta geographica Slovenica / Geografski zbornik* and the series *Geografija Slovenije* (Geography of Slovenia), *Georitem* (Georhythm), and *CAPACities*. It publishes the series *GIS v Sloveniji* (GIS in Slovenia) in even years, the series *Regionalni razvoj* (Regional Development) in odd years, and the series *Naravne nesreče* (Natural Disasters) every third year.



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