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## **MAXIMILIAN DE TRAUX'S ATLAS WITH PLANS OF CROATIAN TOWNS**

### **Abstract**

Maximilian de Traux was a colonel, military writer and cartographer. He was born in 1766 in Antwerp, and died in Wiener Neustadt in 1817. He was admitted to the Engineering Directorate in Zadar in 1803. He spent two years in Dalmatia, where he worked on maintaining and improving town fortifications. He participated in the survey of Dalmatia, the Bay of Kotor, and North Montenegro. He made several maps, copies of some of which are kept in certain institutions throughout Europe. This paper describes his manuscript atlas entitled *Festungen Dalmatiens und Albaniens nebst vorliegenden Inseln, und Beschreibung* (Fortifications of Dalmatia and Albania with the Nearby Islands, and Description), produced in Zadar in 1805. It is dedicated to the Archduke Johann of Austria. The only known copy of the atlas is preserved in the National Library of Serbia in Belgrade, in the Special Collections Department: Cartographic Collection. The atlas is especially significant for Croatia and Montenegro. It contains four maps – *Ober Dalmatien* (North Dalmatia), *Unter Dalmatien* (Central Dalmatia), *Inseln des Quarner* (Kvarner Islands) and *Albanien* (Albania), and 23 plans of fortified towns accompanied by the town descriptions, of which 17 are Croatian. In alphabetical order, they are: Drniš, Hvar, Klis, Knin, Korčula, Makarska, Opuzen, Osor, Pag, Sinj, Split, Supetar, Šibenik, Trogir, Zadar and Zadvarje, and the fortress on the islet of St. Peter. The atlas also contains plans of former Austrian Albanian towns, which are in present-day Montenegro: Kotor, Herceg Novi, Budva, Perast and St. Stefan, and Holy Trinity Fortress. The atlas includes descriptions of Dalmatia and the Dalmatian islands, and a description of former Austrian Albania, i.e. part of Montenegro today.

**Keywords:** Maximilian de Traux, atlas, maps, plans, Croatian towns

## INTRODUCTION

The 1805 manuscript atlas *Festungen Dalmatiens und Albaniens nebst vorliegenden Inseln, und Beschreibung* by Maximilian de Traux is one of the most important atlases kept in the atlas collection of the Cartographic Collection at the National Library of Serbia.<sup>1</sup>

Short biographical data about Maximilian de Traux can be found in several lexicographical works.<sup>2</sup> We established that in the lexicographical works, it seems his manuscript atlas is not listed among de Traux's works at all. We have seen that Johannes Dörflinger<sup>3</sup> wrote a comprehensive biography of de Traux, but he did not mention the atlas at all among his works. De Traux also made several maps. A search of the online catalogues of twenty institutions throughout Europe where copies of de Traux's maps are kept did not reveal the existence of any copies of his atlas. By studying publications we collected mentioning Maximilian de Traux and/or some of his works, we discovered that only a small number dealt with his atlas. So we will now present an overview of published works in which the atlas and/or maps and/or town plans accompanied by descriptions of places in the atlas are mentioned.

Nikola Dobrović<sup>4</sup> published reproductions of sections of the town plans of Pag, Osor, Zadar, Šibenik, Trogir, Knin, Drniš, Sinj, Supetar, Makarska, Hvar, Korčula, Herceg Novi, Perast, Kotor and St. Stefan from de Traux's atlas. However, none of these sections includes the contents of the plans outside the frame (the plan title – name of the town, number of sheet, and graphic scale), and the author did not even mention that these are sections of plans. We established that he did not publish all the plans in the atlas, because Opuzen, Zadvarje, Holy Trinity Fortress and the fortress on the islet of St. Peter are missing. However, he did include Split

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1 Jelena Glišović, "Kartografski fond = Cartographic Collection", In *Vodič kroz posebne fondove Narodne biblioteke Srbije = Guide through the Special Collections of the National Library of Serbia*, edited by Dragan Purešić (Beograd: Narodna biblioteka Srbije, 2015), 26.

2 Oskar Ludwig Bernhard Wolff, Hrsg., *Neues elegantestes Conversations-Lexicon für Gebildete aus allen Ständen*, 4. Band (Leipzig: Verlag von Ch. E. Kollmann, 1837), 429. – Jaromir Hirtenfeld, Hrsg., *Oesterreichisches Militär-Konversations-Lexikon unter Mitwirkung mehrerer Offiziere der k.k. Armee*, 2. Band (Wien: Kommission bei Karl Gerold und Sohn, 1852), 58. – Eva Obermayer-Marnach, Bearb., *Österreichisches biographisches Lexikon 1815–1950*, I. Band (Graz-Köln: Verlag Hermann Böhlau Nachf., 1957), 181. – Constantin von Wurzbach, *Biographisches Lexikon des Kaisertums Oesterreich, enthaltend die Lebensskizzen der denkwürdigen Personen, welche 1750 bis 1850 im Kaiserstaate und in seinen Kronländern gelebt haben*, 3. Teil (Wien: Druck und Verlag der typogr.-literar.-artist. Anstalt, 1858), 265–266. – Ronald Vere Tooley, *Tooley's Dictionary of Mapmakers* (Tring: Map Collector Publications Limited, 1979), 625. – Valerie Scott, ed., *Tooley's Dictionary of Mapmakers*, Revised edition, Q–Z (Riverside: Early World Press, 2004), 288.

3 Johannes Dörflinger, "Leben und kartographisches Werk der Ingenieuroffiziere De Traux (unter besonderer Berücksichtigung von Maximilian De Traux)", In *La Cartographie au XVIIIe siècle et l'œuvre du Comte de Ferraris (1726–1814)*, Colloque International (Bruxelles: Credit Communal de Belgique, 1978), 205–223.

4 Nikola Dobrović, *Urbanizam kroz vekove, Jugoslavija*, sv. 1. (Beograd: Naučna knjiga, 1950), II. dio knjige.

and Klis, without publishing de Traux's plans of these places. For Klis, Dobrović instead provides a sketch which we confirmed was made based on the plan, without mentioning the original. Alongside each reproduction there are a few sentences which prove to be translations from the descriptions of individual towns in the atlas. It should also be noted that Dobrović does not say where the atlas is kept, and does not give its title, call number, or number of sheets for individual plans, nor mention that it contains descriptions of towns and four maps.

Describing cartographic representations of Makarska, Klis and Split, Arsen Duplančić<sup>5</sup> published sections of photographs of the plans of these fortified towns from de Traux's atlas. He did mention where the atlas is kept, its title and call number, number of pages with descriptions of towns, and number of sheets of town plans. He provides a transcript of each town's description, but makes no mention of plans of other towns or maps in the atlas.

In their biographical lexicon *Hrvatski kartografi* (Croatian Cartographers), Miljenko Lapaine and Ivka Kljajić<sup>6</sup> mention the atlas title and institution where it is kept, among other information about Maximilian de Traux, but not the call number. They mention only the names of Croatian towns with plans in the atlas, but not those in Montenegro, and they do not say that there are town descriptions and four maps in the atlas.

Among cartographic works depicting Dalmatia in the early 19<sup>th</sup> century, Mirela Slukan Altić<sup>7</sup> includes de Traux's atlas, its title and call number, institution where it is kept, number of maps and plans of towns (fortresses), with their titles. She also mentions the Internet address where it can be accessed. She says that it contains a comprehensive description of Dalmatia and Austrian Albania. However, it is not clear from her paper whether the atlas contains descriptions of towns (fortresses) and descriptions of islands.

While investigating the purpose, date, appearance and condition of the fortress on the islet of St. Peter, Andrej Žmegač<sup>8</sup> used the fortress plan and island description from de Traux's atlas. He provides a reproduction of the fortress plan and a translation of the description in Croatian. Two years later, the same author published a paper on de Traux's atlas.<sup>9</sup> We established that in it, he described the atlas and

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5 Arsen Duplančić, "Makarska na crtežima i planovima do sredine XIX. stoljeća", *Makarsko primorje* 1, br. 1 (1990): 115, 117, 120, 128. – Arsen Duplančić, "Građa za poznavanje kliške tvrđave do početka 19. stoljeća", *Godišnjak zaštite spomenika kulture Hrvatske* 17, br. 17 (1991): 202, 211. – Arsen Duplančić, "Prinos dokumentaciji urbanističkog razvitka Splita od 17. do 19. stoljeća", *Godišnjak zaštite spomenika kulture Hrvatske* 20-21, br. 20-21 (1994–1995): 150–153.

6 Miljenko Lapaine and Ivka Kljajić, *Hrvatski kartografi, biografski leksikon* (Zagreb: Golden marketing-Tehnička knjiga, 2009), 595–596.

7 Mirela Slukan Altić, "Die hydrographische und topographische Vermessung Dalmatiens durch die Franzosen zur Zeit Napoleons", *Cartographica Helvetica*, 46 (2012): 22, 24.

8 Andrej Žmegač, "Kaštel Sv. Petar kraj Lošinja", *Radovi Instituta za povijest umjetnosti* 38, 38 (2014): 83, 84.

9 Andrej Žmegač, "Priručnik za Dalmaciju: De Trauxov opis iz 1805.", *Ars Adriatica* 6, 6 (2016): 199-208.

interpreted several sentences from de Traux's introduction, descriptions of Dalmatia, the islands and Albania, and several town descriptions (Zadar, Šibenik, Split, Opuzen, Knin, Osor, Supetar, Hvar, Korčula, Kotor, Herceg Novi and St. Stefan). He analysed de Traux's plans of Šibenik, Split, and a drawing of the Land Gate. The paper also contains reproductions of several pages from the atlas (the title page with place and year of composition, a section of the page with the dedication, a drawing of the Land Gate, maps of Albania and central Dalmatia, and plans of Šibenik, Split and Opuzen). In both papers,<sup>10</sup> Žmegač gave the atlas title and institution where it is kept, but not the call number, nor the fact that it has been digitised and is accessible on the Internet.

It should be mentioned that the atlas has been digitalised and is accessible on the portal of the Digital National Library of Serbia.<sup>11</sup> Based on the presentation of the first version of the Digital National Library of Serbia, published on the Official channel of the National Library of Serbia on YouTube,<sup>12</sup> we established that de Traux's atlas has been available through these means since 2007.

Since this year marks the 70<sup>th</sup> anniversary of the foundation of the Special Collections Department of the National Library of Serbia in Belgrade, part of which is the Cartographic Collection, where the only known copy of Maximilian de Traux's atlas is kept, it is an opportunity to describe this very rare, valuable work in more detail.

The atlas is especially significant for Croatia and Montenegro because it contains four maps – *Ober Dalmatien* (North Dalmatia), *Unter Dalmatien* (Central Dalmatia), *Inseln des Quarner* (Kvarner Islands) and *Albanien* (Albania). Apart from maps, the atlas contains 23 plans of fortified towns with accompanying descriptions. Seventeen of them are Croatian, while six belong to Austrian Albania, formerly Venetian Albania (*Albania Veneta*), and are today in Montenegro. So we will first present biographical data about de Traux and his military and cartographic work, with a special emphasis on his activities in Dalmatia (Croatia) and the Bay of Kotor (Montenegro).

## DE TRAU'S MILITARY AND CARTOGRAPHIC WORK

Maximilian (Max) de Traux was born in 1766 in Antwerp, where he was educated at the Military Academy, and in 1780 he continued his education at the Engineering Academy (Ingenieur-Akademie) in Vienna. In September 1784, he was accepted as a cadet in the Engineering Corps, and the next year became a sub-lieutenant of the Engineering Academy and was transferred to the Czech lands. He was pro-

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10 Žmegač, "Kaštel Sv. Petar kraj Lošinja", 81–86. – Žmegač, "Priručnik za Dalmaciju...", 199–208.

11 [http://digitalna.nb.rs/wb/NBS/Kartografska\\_gradja/Atlasi/KR-VII-009/](http://digitalna.nb.rs/wb/NBS/Kartografska_gradja/Atlasi/KR-VII-009/) (accessed September 12, 2017).

12 <https://www.youtube.com/user/narodnabiblioteka/> (accessed September 12, 2017).

moted to lieutenant in 1787, and in August 1795, he was promoted to second captain. He held the position of the head of engineering in Venice in 1799–1802. He wrote *Storia politico-militare dell'attuale guerra contro la Francia corredata dei rapporti uffiziali pubblicati dalla Corte di Vienna* in six parts. It was published in Venice in 1799/1800. In April 1800, he was promoted to captain.<sup>13</sup>

In 1803, de Traux was accepted into the Engineering Directorate (Geniedirektion) in Zadar, then the capital of Dalmatia, probably as a result of his excellent knowledge of fortifications and mastery of Italian. As the head of engineering in Zadar (1803–1805), he undertook many journeys throughout Dalmatia and what was then Austrian Albania, and visited the fortifications in Zadar, Šibenik, Trogir, Split, Makarska, Herceg Novi and Kotor, and the islands of Brač, Hvar and Korčula. In that period, he compiled two memoirs in which he recorded his research and proposals on fortifications and strategies. The first, which runs to eleven pages, is entitled *Haupt Disposition wegen Errichtung verschiedener Batterien und Aufführung von Geschütz in mehrere Häfen der See Küste von Dalmatien und Albanien und denen dazu gehörigen Inseln wegen der Behauptung der See-Neutralität im Jahr 1803*. It was dated 18 November 1803. The second, *Kurze Uibersicht über die mögliche Vertheidigung des Einganges der Bocche di Cattaro an ihrer Einfahrt bey der Punta d'Ostro immediate betrachtet* was twelve pages long and had three sheets of drawings and situational sketches. It was dated 19 September 1804.<sup>14</sup>

In the summer of 1805, de Traux was sent to the Italian front, and in December he was given new duties in the Fortification Directorate in Trieste. Early in December 1806, he received a letter from the chief of engineering, Austrian Archduke Johann, who had been selected to produce plans for the siege of Kotor Fortress along with the French Engineering Directorate, since he knew the country well and was one of the most reliable experts in fortifications. De Traux arrived at the harbour on the island of Šipan at the end of January 1807. He compiled a project called *Entwurf über die Möglichkeit eines Angriffes auf Cattaro, nämlich von der Seite von Ragusa ohne Meister vom dem Meere zu seyn*, which he also sent to the Archduke

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13 \*\*\*, "Biographie des unlängst verstorbenen k.k. Oberstlieutenants Maximilian de Traux, Professors an der Ingenieur-Akademie in Wienerisch-Neustadt", *Erneuerte Vaterländische Blätter für den österreichischen Kaiserstaat*, Band 2, No. 55 (1818): 219–220. – Wolff, *Neues elegantestes Conversations-Lexicon für Gebildete aus allen Ständen*, 429. – Hirtenfeld, *Oesterreichisches Militär-Konversations-Lexikon unter Mitwirkung mehrerer Offiziere der k.k. Armee*, 58. – Obermayer-Marnach, *Österreichisches biographisches Lexikon 1815–1950*, 181. – Wurzbach, *Biographisches Lexikon des Kaisertums Oesterreich, enthaltend die Lebensskizzen der denkwürdigen Personen, welche 1750 bis 1850 im Kaiserstaate und in seinen Kronländern gelebt haben*, 265. – Dörflinger, "Leben und kartographisches Werk der Ingenieuroffiziere De Traux...", 206–208. – Johannes Dörflinger, "Vom Aufstieg der Militärkartographie bis zum Wiener Kongress (1684 bis 1815)", In *Österreichische Kartographie, Von den Anfängen im 15. Jahrhundert bis zum 21. Jahrhundert*, Herausgegeben von Ingrid Kretschmer und Karel Kriz (Wien: Institut für Geographie und Regionalforschung der Universität Wien, Kartographie und Geoinformation, 2004), 129.

14 \*\*\*, "Biographie des unlängst verstorbenen k.k. Oberstlieutenants Maximilian de Traux,...", No. 55 (1818): 220, No. 57 (1818): 228. – Dörflinger, "Leben und kartographisches Werk der Ingenieuroffiziere De Traux...", 208–209. – Dörflinger, "Vom Aufstieg der Militärkartographie...", 129.

Johann. While he waited almost a month in Šipan harbour, de Traux began to write account of the Bay of Kotor, which was published anonymously in 1808 in Cologne, entitled *Statistisch-Historisch-Militärliche Darstellung der Bocche di Cattaro, Von einem Augenzeugen*. The book contains a map of the Bay of Kotor (*Karte der Bocche di Cattaro*) which was published in 1807 without the author's name, and attributed to de Traux. Upon returning to Trieste, de Traux continued the fortification works which had already begun, and wrote a short report, *Bericht über die Vertheidigung des Havens von Triest*, dated 20 January 1808. He published the map of the Bay of Kotor and Montenegro (*Carte des Bouches de Cattaro et du Montenegro*) in July 1808, and the map was published posthumously in 1830. At the end of February 1809, Archduke Johann invited him to the Chief Engineering Directorate (General-Geniedirektion) in Vienna, where he arrived two months later. After the Treaty of Schönbrunn, in October 1809, he was transferred to the Fortification Directorate in Buda. Based on his measurements and personal knowledge of the country, and using manuscript cartographic materials, de Traux produced a large map of Dalmatia and the Dubrovnik region (*Carte von Dalmatien und dem Gebieth von Ragusa*). It was published in 1810, and posthumously in 1829.<sup>15</sup>

At the beginning of 1811, he was appointed Professor of Permanent Fortifications and Civil Construction at the Military Academy (Militärakademie) in Wiener Neustadt. In January 1813, he was made a lieutenant-colonel, and promoted to colonel in May 1815. De Traux died on 25 August 1817 in Wiener Neustadt.<sup>16</sup>

From 1807 onwards, de Traux produced and published maps which are kept today in institutions throughout Europe. Some remained unfinished, due to his premature death, and were published posthumously in several editions.

## DE TRAUX'S MANUSCRIPT ATLAS

Maximilan de Traux composed manuscript atlas entitled *Festungen Dalmatiens und Albaniens nebst vorliegenden Inseln, und Beschreibung*, in Zadar in 1805 (Ill. 1). The English translation of the title is *Fortifications of Dalmatia and Albania with the Nearby Islands, and Description*. A copy is kept in the National Library of Serbia in Belgrade, in the Special Collections Department: Cartographic Collection. According to data

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15 Dörflinger, "Leben und kartographisches Werk der Ingenieuroffiziere De Traux...", 209–211, 214–215. – Dörflinger, "Vom Aufstieg der Militärkartographie...", 129.

16 \*\*\*, "Biographie des unlängst verstorbenen k.k. Oberstlieutenants Maximilian de Traux,..." , No. 55 (1818): 220, No. 57 (1818): 228. – Wolff, *Neues elegantestes Conversations-Lexicon für Gebildete aus allen Ständen*, 429. – Hirtenfeld, *Oesterreichisches Militär-Konversations-Lexikon unter Mitwirkung mehrerer Offiziere der k.k. Armee*, 58. – Obermayer-Marnach, *Österreichisches biographisches Lexikon 1815–1950*, 181. – Wurzbach, *Biographisches Lexikon des Kaisertums Oesterreich, enthaltend die Lebensskizzen der denkwürdigen Personen, welche 1750 bis 1850 im Kaiserstaate und in seinen Kronländern gelebt haben*, 265. – Dörflinger, "Leben und kartographisches Werk der Ingenieuroffiziere De Traux..." , 211–213.

from the Union bibliographic-catalogue database COBIB.SR,<sup>17</sup> the atlas consists of [98] pages and XXVII sheets, is hand-coloured, and measures 20×13 cm, call no. A I 9.18 We noticed that on the last page of the atlas, someone had written “10.10.47”, which might be the date (10 October 1947) when it came into the possession of the National Library of Serbia. Its ownership history<sup>19</sup> and how it was acquired for the Library are unknown. It should be mentioned that the cartographic materials of the Cartographic Collection were burnt during the bombing of Belgrade in 1941, and that the Special Collections Department was only established in 1947, to collect mandatory copies of publications, whether purchased, donated, or exchanged.<sup>20</sup>



Illustration 1. Atlas title, place and year of composition

The atlas is dedicated to the Austrian Archduke Johann, signed by Maximilian de Traux in Zadar on 12 March 1805 (Ills. 2–4).

<sup>17</sup> <http://www.vbs.rs/scripts/cobiss?ukaz=getid&lani=en/> (accessed September 12, 2017).

<sup>18</sup> It should be mentioned that Arsen Duplančić (1990, 1991, 1994–1995) and Mirela Slukan Altić (2012) say the call number of the atlas is KR-VII-009. We noted that the call number is found on the cover and first blank page of the atlas. According to information provided by Jelena Glišović, head of the Cartographic Collection of the National Library of Serbia, this is an old call number. The fund in which the atlas is located has been reassigned the prefix A.

<sup>19</sup> Žmegač, “Priručnik za Dalmaciju...”, 207.

<sup>20</sup> Dragana Peruničić, “Uvod u Posebne fondove = Introduction to Special Collections”, In *Vodič kroz posebne fondove Narodne biblioteke Srbije = Guide through the Special Collections of the National Library of Serbia*, edited by Dragana Purešić (Beograd: Narodna biblioteka Srbije, 2015), 6.



Illustration 2. Dedication to the Austrian Archduke Johann

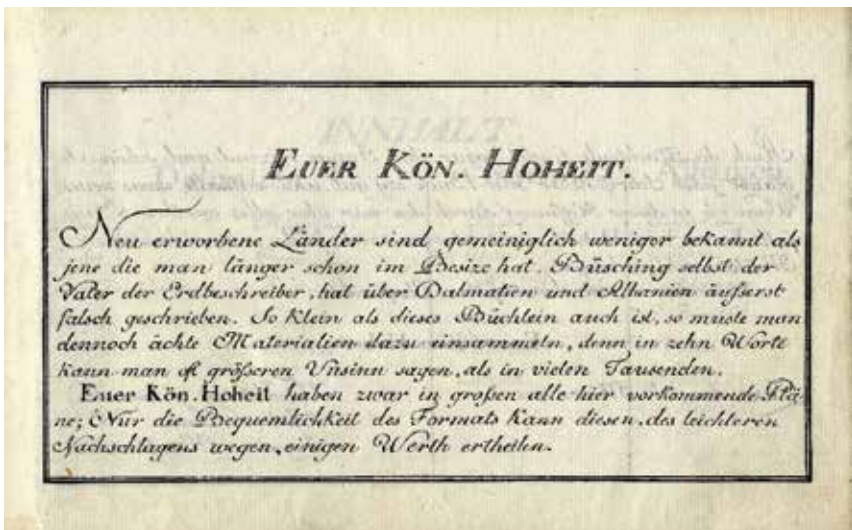


Illustration 3. First page of the dedication



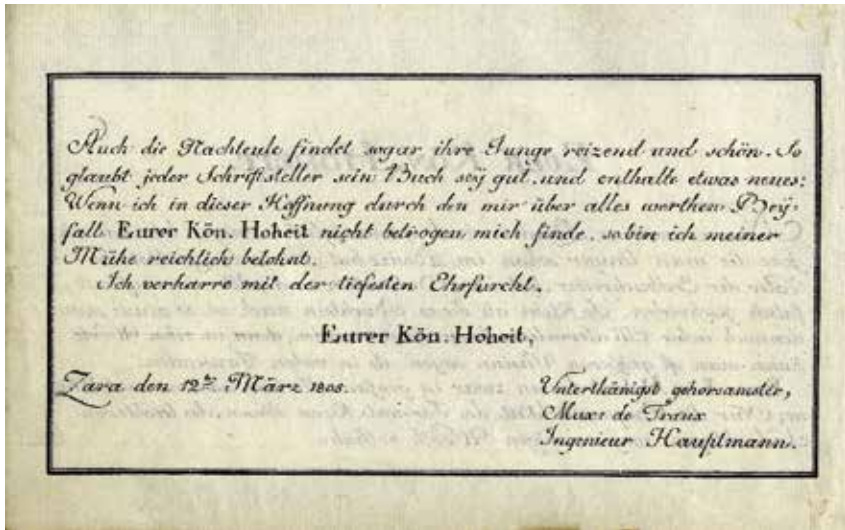


Illustration 4. Second page of the dedication

The translation of the dedication reads:

TO YOUR ROYAL HIGHNESS

Newly acquired territory is generally less well known than that which has been possessed for longer. Eoan Büsching, the father of geography, wrote extremely erroneously about Dalmatia and Albania. Though this book is small, its true material still needed to be gathered, because it is easier to speak nonsense in ten words than in several thousand.

You, Your Royal Highness, possess all the plans in this book in large format. Adapting the format may increase its value by making it easier to browse.

Just as the owl considers its offspring to be charming and beautiful, so any writer believes that his book is good and contains something new. If my hope in the exceptional significance of Your Royal Highness's praise does not disappoint me, I shall consider my labour well rewarded.

I remain, with the deepest respect for,

Your Royal Highness,

Zadar, 12 March 1805

Humbly and submissively,  
Max de Traux  
Engineer Captain

From the dedication, it is clear that de Traux was familiar with the work of the German geographer Anton Friedrich Büsching. It is known that Büsching published his *Neue Erdbeschreibung* in 22 volumes in Berlin between 1754 and 1767. We can also conclude that de Traux himself collected the materials for the atlas, which he called a 'little book' (it measures 20×13 cm).

After the dedication comes a contents page divided into three sections (Ill. 5). By inspecting the atlas we established that the content applies only to maps and plans of towns (fortresses).

<i>INNHALT.</i>			
<i>Dalmatien.</i>		<i>Inseln.</i>	<i>Albanien.</i>
<i>Ober</i>		<i>Macarica.</i>	<i>Albanien.</i>
<i>Unter</i>		<i>Opus.</i>	<i>Castaro.</i>
<i>Insel des Quarneren.</i>		<i>Knin.</i>	<i>Castelluzzo.</i>
<i>Zara.</i>		<i>Sign.</i>	<i>S. Trinità.</i>
<i>Chibenico.</i>		<i>Drniš.</i>	<i>Dudua.</i>
<i>Tirzu.</i>		<i>Quart.</i>	<i>Pirasto.</i>
<i>Spalato.</i>		<i>Clipa.</i>	<i>S. Stefano.</i>
		<i>Pago.</i>	
		<i>Osero.</i>	
		<i>S. Pietro di Nembro.</i>	
		<i>Lecina.</i>	
		<i>Brozza.</i>	
		<i>Curzola.</i>	

Illustration 5. Contents page

Since de Traux's list of contents and published works about it do not reveal everything it contains, we have provided basic data on the atlas in Table 1. It was possible to identify the towns described and presented in the atlas and the number of pages occupied by their descriptions, and an introduction, and descriptions of Dalmatia, the Dalmatian (and Kvarner) islands and Austrian Albania. It was also noticed that the pages at the beginning of the atlas are not numbered, nor the blank ones, and that the section pages are numbered differently, using large and small Roman numerals and also Arabic numerals. The descriptions of towns vary in length; Zadar occupies four pages, while Drniš occupies only one page.

Table 1. Basic data about the contents of the atlas

Number of page (pages)	Title in the atlas	Page (Pages) explanation	Graphic scale / Approximate numerical scale
		blank page	
	<i>Porta di Terra ferma zu Zara</i>	Drawing of the Land Gate in Zadar	
	<i>Innschrift</i>	Text about the Land Gate	
	<i>Ansicht der Stadt und Festung Zara von der Haven Seite</i>	View of the town and fortifications Zadar from the side of the harbour	
	<i>Erklaerung der Ansicht</i>	Explanation of the view	
	<i>Festungen Dalmatiens und Albaniens nebst vorliegenden Inseln, und Beschreibung, Zara im Jahr MDCCV</i>	Title page with the place and year of composition: <i>Fortifications of Dalmatia and Albania with the Nearby Islands, and Description, Zadar 1805.</i>	
		blank page	
	<i>Sr. k. Hoheit dem Erz-Herzogen Johann von Oestreich, Oberhaupt des Genie und Fortifications Wesens</i>	Title of the dedication: <i>His Royal Highness to the Austrian Archduke Johann, the chief of engineering and fortification</i>	
		blank page	
	<i>Euer Kön. Hoheit.</i>	First page of the dedication to the Austrian Archduke Johann	
		Second page of the dedication	
	<i>Inhalt</i>	Contents	
	<i>Pindar Ode XII.</i>	Pindar's Ode XII	
i–viii	<i>Einleitung</i>	Introduction	
1–6	<i>Dalmatien</i>	Description of Dalmatia	
7–10	<i>Zara</i>	Description of Zadar	
11–14	<i>Sebenico</i>	Description of Šibenik	
15–16	<i>Trau</i>	Description of Trogir	
17–22	<i>Spalato</i>	Description of Split	
23–24	<i>Macarsca</i>	Description of Makarska	
25–26	<i>Opus</i>	Description of Opuzen	
27–32	<i>Knin</i>	Description of Knin	
33–34	<i>Sign</i>	Description of Sinj	

Number of page (pages)	Title in the atlas	Page (Pages) explanation	Graphic scale / Approximate numerical scale
35	<i>Dernis</i>	Description of Drniš	
36	<i>Duarè</i>	Description of Zadvarje	
37–38	<i>Clissa</i>	Description of Klis	
i–ii	<i>Inseln in Dalmatien</i>	Description of the islands in Dalmatia	
iii–iv	<i>Pago</i>	Description of Pag	
v–vi	<i>S. Pietro di Nembo</i>	Description of St. Peter	
vii–viii	<i>Osero</i>	Description of Lošinj (and Cres)	
ix–x	<i>Lesina</i>	Description of Hvar	
xi–xii	<i>Brazza</i>	Description of Brač	
xiii–xiv	<i>Curzola</i>	Description of Korčula	
I–VIII	<i>Albanien</i>	Description of Albania	
IX–XII	<i>Cattaro</i>	Description of Kotor	
XIII–XVI	<i>Castelnuovo</i>	Description of Herceg Novi	
XVII–XVIII	<i>S. Trinità</i>	Description of Holy Trinity	
XIX–XX	<i>Budua</i>	Description of Budva	
XXI–XXII	<i>S. Stefano</i>	Description of St. Stefan	
XXIII–XXVIII	<i>Perasto</i>	Description of Perast	
	<i>Dalmatien</i>	Page with the section title <i>Dalmatia</i>	
		blank page	
PL. I.	<i>Ober Dalmatien</i>	Map of northern Dalmatia	6 Deutsche Meilen = 26 mm / 1:1,700,000
		blank page	
PL. II.	<i>Unter Dalmatien</i>	Map of central Dalmatia	6 Deutsche Meilen = 26 mm / 1:1,700,000
		blank page	
PL. III.	<i>Inseln des Quarner</i>	Map of the Kvarner islands	5 Deutsche Meilen = 25 mm / 1:1,500,000
		blank page	

<b>Number of page (pages)</b>	<b>Title in the atlas</b>	<b>Page (Pages) explanation</b>	<b>Graphic scale / Approximate numerical scale</b>
PL. IV.	<i>Zara Hauptstadt Dalmatiens</i>	Plan of Zadar, capital of Dalmatia	300 Klaftern = 36 mm / 1:16,000
		blank page	
PL. V.	<i>Fort S. Nicolo / Sebenico</i>	Plan of the fortress of St. Nikola / Plan of Šibenik	100 Klaftern = 24 mm / 1:8,000 200 Klaftern = 38 mm / 1:10,000
		blank page	
PL. VI.	<i>Trau</i>	Plan of Trogir	50 Klaftern = 28 mm / 1:3,400
		blank page	
PL. VII.	<i>Spalato</i>	Plan of Split	300 Klaftern = 36 mm / 1:16,000
		blank page	
PL. VIII.	<i>Macarsca</i>	Plan of Makarska	150 Klaftern = 25 mm / 1:11,400
		blank page	
PL. IX.	<i>Ehmaliges Fort Opus</i>	Plan of the former Fort of Opus (Opuzen)	2000 Klaftern = 38 mm / 1:100,000
		blank page	
PL. X.	<i>Knin</i>	Plan of Knin	50 Klaftern = 18 mm / 1:5,300
		blank page	
PL. XI.	<i>Sign</i>	Plan of Sinj	50 Klaftern = 22 mm / 1:4,300
		blank page	
PL. XII.	<i>Dernis</i>	Plan of Drniš	25 Klaftern = 35 mm / 1:1,350
		blank page	
PL. XIII.	<i>Duarè</i>	Plan of Zadvarje	50 Klaftern = 35 mm / 1:2,700
		blank page	

Number of page (pages)	Title in the atlas	Page (Pages) explanation	Graphic scale / Approximate numerical scale
PL. XIV.	<i>Clissa</i>	Plan of Klis	40 Klaftern = 26 mm / 1:3,000
		blank page	
	<i>Inseln in Dalmatien</i>	Page with the section title <i>The Islands in Dalmatia</i>	
		blank page	
PL. XV.	<i>Pago</i>	Plan of Pag	100 Klaftern = 24 mm / 1:8,000
		blank page	
PL. XVI.	<i>Osero</i>	Plan of Osor	100 Klaftern = 20 mm / 1:9,500
		blank page	
PL. XVII.	<i>S. Pietro di Nembo</i>	Plan of the fortress on the islet of St. Peter	10 Klaftern = 28 mm / 1:700
		blank page	
PL. XVIII.	<i>Lesina</i>	Plan of Hvar	100 Klaftern = 16 mm / 1:12,000
		blank page	
PL. XVIII.	<i>S. Pietro di Brazza</i>	Plan of Supetar	100 Klaftern = 16 mm / 1:12,000
		blank page	
PL. XX.	<i>Curzola</i>	Plan of Korčula	no scale
		blank page	
	<i>Albanien</i>	Page with the section title <i>Albania</i>	
		blank page	
PL. XXI.	<i>K. K. Albanien</i>	Map of Albania	4 Deutsche Meilen = 35 mm / 1:850,000
		blank page	
PL. XXII.	<i>Cattaro Hauptstadt Albaniens</i>	Plan of Kotor, capital of Albania	200 Klaftern = 40 mm / 1:9,500
		blank page	
PL. XXIII.	<i>Castelnuovo</i>	Plan of Herceg Novi	150 Klaftern = 36 mm / 1:8,000
		blank page	

Number of page (pages)	Title in the atlas	Page (Pages) explanation	Graphic scale / Approximate numerical scale
PL. XXIII.	<i>Blockhaus St. Trinità</i>	Plan of the Holy Trinity Blockhouse	20 Klaftern = 32 mm / 1:1,000
		blank page	
PL. XXV.	<i>Budua</i>	Plan of Budva	50 Klaftern = 30 mm / 1:3,000
		blank page	
PL. XXVI.	<i>Perasto</i>	Plan of Perast	40 Klaftern = 36 mm / 1:2,000
		blank page	
PL. XXVII.	<i>S. Stefano</i>	Plan of St. Stefan	80 Klaftern = 32 mm / 1:4,700
		blank page	
		blank page	

The map (and plan) frames are rectangular, drawn using one thin line (the inner frame) and one thick line (the outer frame). Beyond the frames, the map title (plan title), number of map (plan) sheet and the graphic scale are located. The maps feature graphic scale where the unit is the German mile (*Deutsche Meile*, 1 German mile = 7420.54 m) (Ill. 6), while on the town plans, the unit of length is the fathom (*Klafter*, 1 fathom = 1.896484 m) (Ill. 8). Only the plan of Korčula does not include a graphic scale. The lengths of the graphic measurement scales can be read from the maps and plans, and we determined approximate numerical scales which we give in the fourth column of Table 1, from which it is evident that the town plans were made in different scales.



Illustration 6. Map of northern Dalmatia (Ober Dalmatien)

By inspecting the atlas we discovered that the sheets measure 19×11.5 cm, but that the dimension of the inner frames of the maps and town (fortress) plans differ. The dimensions of the map frames for northern and central Dalmatia are 11×8 cm, the dimensions of the map frames for the Kvarner islands are 16×8 cm, while the dimensions of all the town (fortress) plans are 15.5–16×8 cm, and the dimensions of map frames for Albania are 12×8 cm. We also discovered that most of the contents in the atlas are on both sides of the sheets, but there are some with contents only on the front pages of the sheets (the title page, dedication page, three pages with decorated titles for the sections covering maps and/or plans of towns (fortresses) belonging to Dalmatia, the Dalmatian (and Kvarner) islands, and what was then Austrian Albania). There are 34 blank pages in the atlas.

## CROATIAN TOWNS IN THE DE TRAUX'S ATLAS

The atlas contains 23 plans of fortified towns, of which 17 are Croatian. From Table 1 and Illustration 7, it can be seen that de Traux described and depicted the following towns in Dalmatia: Zadar, Šibenik, Trogir, Split, Makarska, Opuzen, Knin, Sinj, Drniš, Zadvarje and Klis. It should be emphasised that he described the islands of Lošinj (and Cres), Pag, Brač, Hvar and Korčula, and the islet of St. Peter, but did not include maps of these islands, but rather plans of the towns of Osor, Pag, Supetar, Hvar and Korčula, and a plan of the fortress on the islet of St. Peter. Apart from these Croatian towns, five towns and one fortress are described which then belonged to Austrian Albania, and are now in Montenegro: Kotor, Herceg Novi, Budva, Perast and St. Stefan, and and Holy Trinity Fortress.



Illustration 7. Towns and fortresses in the atlas



Our examination of the atlas showed that Zadar is represented the most. One reason for this may be that Maximilian de Traux was appointed the head of engineering in the Engineering Department in Zadar in 1803, and spent almost two years there. He also composed the atlas in Zadar. At the beginning of the atlas there is a drawing of the Land Gate in Zadar and a text about it. There follows a view of the town and fortifications of Zadar from the side of the harbour (*Ansicht der Stadt und Festung Zara von der Haven Seite*) dedicated to the Archduke Johann of Austria (*Seiner Kön. Hoheit dem Erz-Herzogen Johann von Oestreich*), with an explanation page of the view (*Erklaerung der Ansicht*). At the time when the atlas was composed, Zadar was the capital of Dalmatia, as de Traux wrote in the title of the town plan (Ill. 8), while in the description, he emphasised that it was the only town which deserved to be called a fortification.



Illustration 8. Plan of Zadar

As part of her diploma thesis, Sonja Lihter<sup>21</sup> provided a translation in Croatian of all the descriptions of fortified Croatian towns and islands in the atlas. Her thesis also contained a translation of the introduction and descriptions of Dalmatia and the Dalmatian (and Kvarner) islands. In his introduction, de Traux mentions publications by his predecessors, and in the description of Dalmatia, several cartographers who made maps of Dalmatia, whose works he probably used in compiling his atlas.

<sup>21</sup> Sonja Lihter, "Atlas Maximiliana de Trauxa s planovima hrvatskih gradova" (diplomski rad, Geodetski fakultet, Zagreb, 2015).

From the descriptions of towns, we concluded that de Traux mostly wrote about their locations, advantages and disadvantages, from the military point of view – the state of the fortifications and military objects, suggestions for their improvements, the population, traditions, trade, and attacks throughout history, thus describing military strategy, the commanders in charge, the size of the army, possibilities of defense of the town, etc. In addition, he wrote about each island, its towns, fortresses and products, in its description. As an example of his town description, we present here all four pages of his description of Zadar (Ills. 9–12).



Illustration 9. First page of the description of Zadar

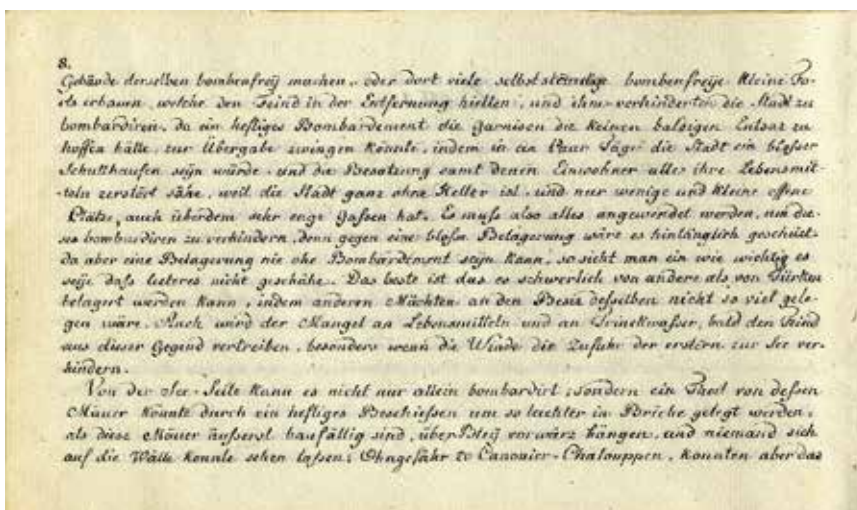


Illustration 10. Second page of the description of Zadar

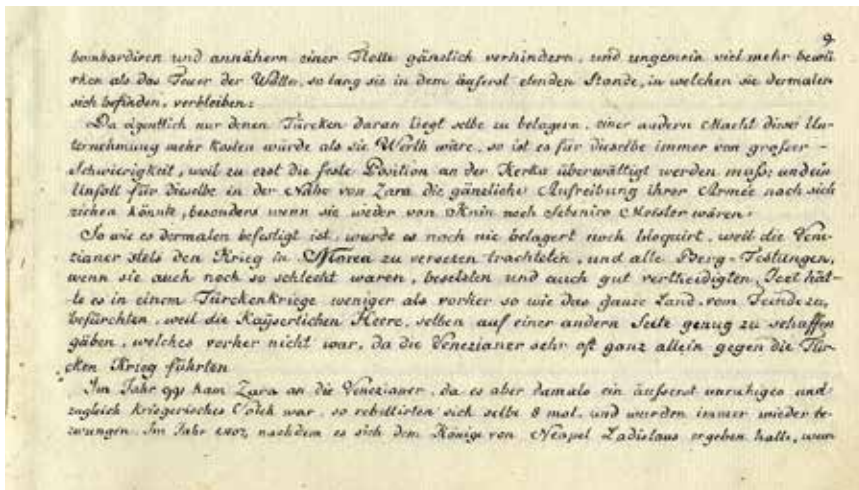


Illustration 11. Third page of the description of Zadar

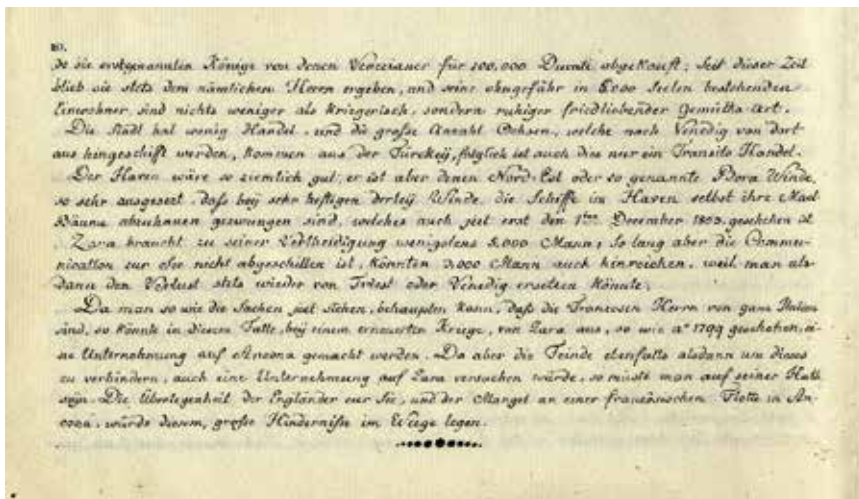


Illustration 12. Fourth page of the description of Zadar

## CONCLUSION

Maximilian de Traux was accepted into the Engineering Directorate in Zadar in 1803. During his two-year stay in Zadar, as the head of engineering, he undertook many journeys throughout Dalmatia and what was then Austrian Albania, and visited the fortifications in Zadar, Šibenik, Trogir, Split, Makarska, Herceg Novi and Kotor, and the islands of Brač, Hvar and Korčula.

We learned that Maximilian de Traux collected materials for his atlas entitled *Festungen Dalmatiens und Albaniens nebst vorliegenden Inseln, und Beschreibung* (Fortifications of Dalmatia and Albania with the Nearby Islands, and Description) by visiting the terrain, as well as using the works of his predecessors. The atlas was produced in Zadar in 1805. Besides the atlas, de Traux also made several maps. We established that only a small number of publications exist about de Traux and his works, particularly the atlas, and that most of them do not provide information on its full contents. We also established that lexicographical works which contain biographical data on Maximilian de Traux do not mention the atlas at all. A search of the online catalogues of twenty institutions throughout Europe where copies of de Traux's maps are kept did not reveal the existence of any copies of his atlas. Therefore we concluded that, to date, only one copy of his manuscript atlas is known to exist, in the National Library of Serbia in Belgrade.

Maximilian de Traux's atlas is a valuable manuscript which has been digitised and is accessible on the portal of the Digital National Library of Serbia. This is an indication of its importance and the desire to protect and preserve it for future generations, making it available to virtual users online. It would be very useful to produce a facsimile of the atlas with translations of its contents in Croatian and English, in order to make it available to a wider circle of users, particularly those who are not familiar with its original language, German.

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## References

- Dobrović, Nikola. *Urbanizam kroz vekove, Jugoslavija*, sv. 1. Beograd: Naučna knjiga, 1950.
- Dörflinger, Johannes. "Leben und kartographisches Werk der Ingenieuroffiziere De Traux (unter besonderer Berücksichtigung von Maximilian De Traux)". In *La Cartographie au XVI-Ile siècle et l'œuvre du Comte de Ferraris (1726-1814)*, Colloque International, 191–224. Bruxelles: Credit Communal de Belgique, 1978.
- Dörflinger, Johannes. "Vom Aufstieg der Militärkartographie bis zum Wiener Kongress (1684 bis 1815)". In *Österreichische Kartographie, Von den Anfängen im 15. Jahrhundert bis zum 21. Jahrhundert*, Herausgegeben von Ingrid Kretschmer und Karel Kriz, 75–168. Wien: Institut für Geographie und Regionalforschung der Universität Wien, Kartographie und Geoinformation, 2004.
- Duplančić, Arsen. "Makarska na crtežima i planovima do sredine XIX. stoljeća". *Makarsko primorje* 1, br. 1 (1990): 115–129.
- Duplančić, Arsen. "Građa za poznavanje kliške tvrđave do početka 19. stoljeća". *Godišnjak zaštite spomenika kulture Hrvatske* 17, br. 17 (1991): 193–214.
- Duplančić, Arsen. "Prinos dokumentaciji urbanističkog razvitka Splita od 17. do 19. stoljeća". *Godišnjak zaštite spomenika kulture Hrvatske* 20–21, br. 20–21 (1994–1995): 143–153.
- Glišović, Jelena. "Kartografski fond = Cartographic Collection". In *Vodič kroz posebne fondove Narodne biblioteke Srbije = Guide through the Special Collections of the National Library of Serbia*, edited by Dragan Purešić, 23–28. Beograd: Narodna biblioteka Srbije, 2015.
- Hirtenfeld, Jaromir, Hrsg. *Oesterreichisches Militär-Konversations-Lexikon unter Mitwirkung mehrerer Offiziere der k.k. Armee*, 2. Band. Wien: Kommission bei Karl Gerold und Sohn, 1852.
- Lapaine, Miljenko and Kljajić, Ivka. *Hrvatski kartografi, biografski leksikon*. Zagreb: Golden marketing-Tehnička knjiga, 2009.
- Lihter, Sonja. "Atlas Maximiliana de Trauxa s planovima hrvatskih gradova". Diplomski rad, Geodetski fakultet, Zagreb, 2015.
- Obermayer-Marnach, Eva, Bearb. *Österreichisches biographisches Lexikon 1815–1950*, I. Band. Graz-Köln: Verlag Hermann Böhlaus Nachf., 1957.
- Peruničić, Dragana. "Uvod u Posebne fondove = Introduction to Special Collections". In *Vodič kroz posebne fondove Narodne biblioteke Srbije = Guide through the Special Collections of the National Library of Serbia*, edited by Dragan Purešić, 5–6. Beograd: Narodna biblioteka Srbije, 2015.
- Scott, Valerie, ed. *Tooley's Dictionary of Mapmakers*, Revised edition, Q–Z. Riverside: Early World Press, 2004.
- Slukan Altić, Mirela. "Die hydrographische und topographische Vermessung Dalmatiens durch die Franzosen zur Zeit Napoleons". *Cartographica Helvetica*, 46 (2012): 17–24.
- Tooley, Ronald Vere. *Tooley's Dictionary of Mapmakers*. Tring: Map Collector Publications Limited, 1979.
- Wolff, Oskar Ludwig Bernhard, Hrsg. *Neues elegantestes Conversations-Lexicon für Gebildete aus allen Ständen*, 4. Band. Leipzig: Verlag von Ch. E. Kollmann, 1837.

Wurzbach, Constantin von. *Biographisches Lexikon des Kaisertums Oesterreich, enthaltend die Lebensskizzen der denkwürdigen Personen, welche 1750 bis 1850 im Kaiserstaate und in seinen Kronländern gelebt haben*, 3. Teil. Wien: Druck und Verlag der typogr.-literar.-artist. Anstalt, 1858.

Žmegač, Andrej. "Kaštel Sv. Petar kraj Lošinja". *Radovi Instituta za povijest umjetnosti* 38, 38 (2014): 81–86.

Žmegač, Andrej. "Priručnik za Dalmaciju: De Trauxov opis iz 1805". *Ars Adriatica* 6, 6 (2016): 199–208.

\*\*\*. "Biographie des unlängst verstorbenen k.k. Oberstlieutenants Maximilian de Traux, Professors an der Ingenieur-Akademie in Wienerisch-Neustadt". *Erneuerte Vaterländische Blätter für den österreichischen Kaiserstaat*, Band 2, No. 55 (1818): 219–220, No. 57 (1818): 228.



## Sažetak

### Atlas Maximiliana de Trauxa s planovima hrvatskih gradova

Maximilian de Traux bio je pukovnik, vojni pisac i kartograf. Rođen je 1766. u Antwerpenu, a umro 1817. u Bečkom Novom Mjestu. U Inženjerijsku direkciju u Zadru primljen je 1803. godine. Dvije godine boravio je u Dalmaciji, gdje je radio na održavanju i poboljšanju gradskih utvrda. Sudjelovao je u izmjeri Dalmacije, Boke Kotorske i sjeverne Crne Gore. Izradio je nekoliko karata, primjerci nekih od njih čuvaju se u pojedinim institucijama diljem Europe. U radu je opisan njegov rukopisni atlas *Festungen Dalmatiens und Albaniens nebst vorliegenden Inseln, und Beschreibung* (Utvrde Dalmacije i Albanije s pripadnim otocima, te opisom) koji je sastavljen u Zadru 1805. godine. Posvećen je austrijskom nadvojvodi Johannu. Jedini poznati primjerak atlasa čuva se u Narodnoj biblioteci Srbije u Beogradu, u Odeljenju posebnih fondova – Kartografski fond. Atlas je posebno značajan za Hrvatsku i Crnu Goru. Sadrži četiri karte *Ober Dalmatien* (Sjeverna Dalmacija), *Unter Dalmatien* (Srednja Dalmacija), *Inseln des Quarners* (Kvarnerski otoci) i *Albanien* (Albanija), te 23 plana utvrđenih gradova popraćenih opisima gradova, od kojih je 17 hrvatskih gradova. Abecednim redoslijedom to su: Drniš, Hvar, Klis, Knin, Korčula, Makarska, Opuzen, Osor, Pag, Sinj, Split, Supetar, Šibenik, Trogir, Zadar i Zadvarje te utvrda na otočiću Sv. Petar. Atlas sadrži sljedeće planove gradova tadašnje Austrijske Albanije, a danas su gradovi Crne Gore: Kotor, Herceg Novi, Budva, Perast i Sv. Stefan te utvrda Sv. Trojica. Obuhvaća i opise Dalmacije i dalmatinskih otoka te opis tadašnje Austrijske Albanije, tj. dijela današnje Crne Gore.

**Ključne riječi:** Maximilian de Traux, atlas, karte, planovi, hrvatski gradovi

