

# CONTRIBUTIONS TO THE KNOWLEDGE OF THE RIVER DRAVA FLOOD IN 1827

## PRINOSI POZNAVANJU POPLAVE RIJEKE DRAVE 1827. GODINE

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Received/Primljeno: 12.12.2021.

Accepted/Prihvaćeno: 30.12.2021.

Original scientific paper / Izvorni znanstveni rad

UDK / UDC: 504.4:556.166(497.5-282.24Drava)  
"1827"(091)

314.1:711.168(436+439)"1827"

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### Summary

*The authors of the article analyse the data on the flood of the Drava River in 1827, which are recorded in written historical sources in settlements affected by the flood, i.e. by people who experienced the flood or by journalists. The flood of the Drava River in 1827 was one of the strongest floods, about which relatively many records have been preserved. Its intensity was very strong, especially in the area between Maribor and Osijek. The effects of the flood of 1827 were also recorded upstream from Maribor, but data researched so far indicate that in that area the flood of 1827 was weaker than the flood of 1823. A special section presents the impact of the Drava River flood that occurred in 1827 in settlements in Tyrol, Carinthia, Styria, civil Croatia, the Hungarian counties of Zala and Baranja, Military Frontier and Slavonia. As most other articles on the Drava floods in the 19th century so far focus only on some parts of the Drava River, this article is a contribution to the research of one of the floods in the area from the first settlement after the river source to its estuary. Knowledge of individual severe floods of one river can also serve as a contribution to climate change research. According to the scheme for classification of the intensity of historical floods, based on the classification of primary and secondary indicators, flood levels are proposed by numbers 1-3, where 1 is the lowest and 3 the highest. For the floods of the Drava from 1827 the authors propose the inclusion in the highest level of floods - 3.*

**Keywords:** Drava River, flood, 1827, population, 19<sup>th</sup> century

**Ključne riječi:** rijeka Drava, poplava, 1827. godina, stanovništvo 19. stoljeće

### INTRODUCTION

In the past, the Drava River has significantly influenced the people who lived in the valley through which it flows. The Drava springs in Italy and at the end of its 749 km long course it flows into the Danube River near Aljmaš in Croatia. In the lower parts of the course, the Drava riverbed often changed, and it has a fast flow, which is why we consider it a whimsical river. It strongly erodes its shores and sup-

plies water to many wetlands, ponds, floodplain forests, canals and the like. Therefore, hydro-regulatory works have been carried out on the lower part of the Drava since the 18<sup>th</sup> century.<sup>1</sup>

At the beginning of the 19<sup>th</sup> century, the Drava water level was sensitive to two key phenomena. On one hand, melting of snow and ice in the area of the source and upper course of the river Drava (the Alps) in the spring, and on the other hand, abundant and long-lasting precipitation in the area of the middle and lower reaches.<sup>2</sup> The Drava River has its maximum water level in late spring (June) and late summer (September). Therefore, frequent and severe floods of the Drava River in the past were recorded at that time. The river then overflowed its banks, and the water destroyed crops, caused material damage and endangered the lives of people and livestock. Therefore, floodplains along the lower course of the Drava River, which are wetlands, ponds, ditches, lowland forests and others, are of great importance. Such places absorb excess water during the outflow of the river from the riverbed. But since these are also places that people were happy to cultivate in order to get additional amounts of agricultural land, a clash arose between the people and the river. Our knowledge of flood intensity mainly depends on the data recorded in available historical sources. However, based on previous research we could conclude that the Drava River overflowed from its bed every few years in at least a couple of areas of its stream. For older times (Middle Ages) we have less data, so from the 17<sup>th</sup> century, and especially in the 18<sup>th</sup> and 19<sup>th</sup> century we can systematically monitor data on the outflows of the Drava River. Of course, the floods of the 20<sup>th</sup> and 21<sup>st</sup> century are best documented.<sup>3</sup>

Various weather disasters have affected the lives of people along the Drava in the past centuries. Some of them are better and the others less well documented in historical sources, but they certainly attract the attention of researchers. With earthquakes, fires, storms or severe cold, people were often affected by floods. Floods near a large river such as the Drava are relatively common. Today, the great floods of the Drava River, as they threatened the settlements in Podravina in the 18<sup>th</sup>, 19<sup>th</sup> and most of the 20<sup>th</sup> century, are considered to be only episodes in the turbulent and difficult past. But climate change and unusual phenomena nowadays encourage us to think about their impact on people's daily lives. The unfortunate events that we can relatively often hear and read about in the media warn of the tremendous power of the rivers that overflow. Given that major hydro-regulatory and reclamation works have been carried out in the Drava Valley in the past centuries, it seems that many settlements have become less dependent on the Drava River and its tributaries.

One of the most significant floods of the Drava River occurred in the spring of 1827 and it is not included in the literature among the major European floods before 1900.<sup>4</sup> Floods in June 1827 were recorded at some other locations, such as the Roda River in Thuringia.<sup>5</sup> Knowledge of floods can serve as a contribution to climate change research.<sup>6</sup> In Switzerland, Christian Pfister conducted important research into the relationship between climate change and extreme hydraulic events, including floods.<sup>7</sup>

The consequences of major floods such as the one in 1827 were visible in changes in the economy and demographic trends, but this should be investigated in more detail in future research, which should

<sup>1</sup> Cik, Nikola. "Nacrt Podravja od Hlebina do medje županije virovičke uz oznaku vodogradnje' iz 1780. godine". *Podravina, časopis za multidisciplinarna istraživanja*, vol. XII, br. 24, Koprivnica, 2013., 57-73; Petrić, Hrvoje, Obadić, Ivan, "Drava River Flooding in Varaždin and Koprivnica Parts of Podravina (Drava River Region – Between Croatia and Hungary) in the Period 17th-19th Century, Podravina", vol. 6, br. 12, Koprivnica 2007., 136-147; Petrić, Hrvoje. "Poplave i pogranična naselja od 17. do 19. stoljeća – primjer rijeke Drave". *Bertošin zbornik: Zbornik u čast Miroslava Bertoše*, ur. Ivan Jurković. Pula-Pazin: Sveučilište Jurja Dobrile u Puli – Državni arhiv u Pazinu, 2013., 415; Cik, Nikola. *Ekohistorija Đurđevca i Virja u drugoj polovini 18. stoljeća*. Đurđevac: Meridijani, 2016., 35.

<sup>2</sup> Živaković-Kerže, Zlata. "Ostavljajte sve, a spašavajte goli život" - osvrt na plavljenja Drave od 18. stoljeća do 20. stoljeća". *Ekonomska i ekohistorija*, vol. XIII, br. 13. Zagreb, 2016., 57-58.

<sup>3</sup> Blöschl, Günter et al. "Current European flood-rich period exceptional compared with past 500 years". *Nature* 583, 2020., 560-566.

<sup>4</sup> Up to now the flood of March 1827 was ranked among significant European floods, when the rivers Meuse, Main, Vltava, Vistula and Oder flooded. Glaser, Rüdiger et al. "The variability of European floods since AD 1500", *Climatic Change*, vol. 101, 2010., br. 1-2, 250.

<sup>5</sup> Deutsch, Mathias, Reeh, Tobias, Karthe, Daniel. "Severe historical floods on the river Roda, Thuringia: from reconstruction to implications for flood management", *Die Erde. Journal of the Geographical Society of Berlin. Zeitschrift der Gesellschaft für Erdkunde zu Berlin*, Berlin 2018, vol. 149, 2-3, 64-75.

<sup>6</sup> Kiss, Andrea. *Floods and Long-Term. Water-Level Changes in Medieval Hungary*. Cham: Springer, 2019.

<sup>7</sup> Pfister, Christian. "Überschwemmungen und Niedrigwasser im Einzugsgebiet des Rheins 1500–2005", in: Bürgin, Toni et al. (Hg.): *Der Rhein – Lebensader einer Region*. Zürich 2006 (Neujahrsblatt der Naturforschenden Gesellschaft Zürich, 208), 265–273.



**Fig 1** The Drava River

be partly focused on attempts to detect the impact of the Drava flood on its population that has been directly or indirectly affected by it. As a hypothesis, we can ask the question whether the flood of 1827 affected people and settlements along the entire course of the Drava River.

Part of the research on the flood of the Drava River in 1827 was published earlier by the authors of this article and it relates to Drnje and neighboring villages<sup>8</sup> and Đurđevac area.<sup>9</sup> Incidental data provided by other authors on this flood in various places are presented through references in the text.

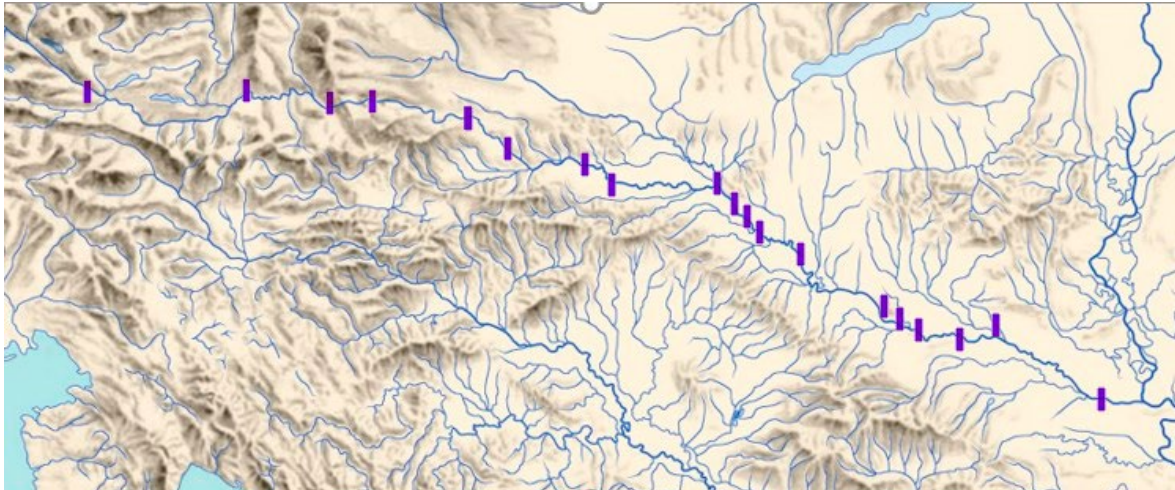
## ABOUT THE FLOOD OF THE DRAVA IN 1827 IN TYROL, CARINTHIA AND STYRIA

The Drava flood of 1827 was recorded near the source of the Drava in Innichen (San Candido) in the southern part of Tyrol<sup>10</sup>, but we were unable to find information about it from the source. Ten kilometers downstream we have preserved data from the newspapers of that time which show that on May 15, 1827 a dam broke on the Drava near Silliano in Tyrol and a lake was formed at the bottom of the valley that stretched from Arnbach to Strassen. Two-thirds of Sillian market was one month long under water that

<sup>8</sup> Petrić, Hrvoje. "Utjecaj rijeke na pogranična naselja. Primjer rijeke Drave u 18. i 19. stoljeću", *Ekonomska i ekohistorija*, časopis za gospodarsku povijest i povijest okoliša, vol. I, br. 1. Zagreb-Samobor, 2005., 37-62. In relation to this article, the data from the source have been supplemented. Many priests have recorded data on this flood in the testimonials of their parishes (*Liber memorabilium*) and thus left us valuable data that need to be collected and interpreted. Thanks to this we can compare the flood of 1827 with other floods. Part of the data is presented in the text written by Petrić, Hrvoje. "Some Aspects of the Interrelationship between Humans and the River Drava in the Pre-Industrial Times with an Emphasis on the Late 18th and Early 19th Century", *Man, Nature and Environment Between the Northern Adriatic and the Eastern Alps in Premodern Times*, Znanstvena založba Filozofske fakultete Univerze v Ljubljani, eds. Peter Štih, Žiga Zwitter, Zbirka zgodovinskega časopisa, Ljubljana 2014, 260-289; Petrić, Hrvoje. "On the Lower Sava and Drava Rivers at the End of the 18th and Early 19th Centuries", in: Harald Heppner, Goran Vasin, Nenad Ninković (eds.), *The Habsburg State-wide and the regions in the Southern Danube basin (16th – 20th centuries)*, Wien: New academic press, 2020., 139-171.

<sup>9</sup> Cik, Nikola. "Velika poplava rijeke Drave 1827. godine" <https://podravske-sirine.com.hr/arhiva/6551>, pristupljeno 12. prosinca 2021.; Cik, Nikola. "Utjecaj rijeke Drave na naselja u đurđevčkoj Podravini - primjer sela Brod u 18. i 19. stoljeću". *Ekonomska i ekohistorija*, časopis za gospodarsku povijest i povijest okoliša, vol. XIII, broj 13. Zagreb, 2017., 36-46.

<sup>10</sup> Innichen or San Candido is located in Italy today and is the first inhabited place through which the Drava River flows. Data on the flood of 1827: Kühebacher, Egon (ur.). *1250 Jahre Innichen - eine Festschrift zum Jubiläumsjahr 2019: Beiträge zur Geschichte Innichens von 769 n.Chr. bis ins späte 19. Jahrhundert*, Innsbruck: Universitätsverlag Wagner, 2019.; part of the text in which the flood of 1827 is mentioned: Kühebacher, Egon. Im Kampf gegen Feuer und Wasser, <https://www.1250.bz.it/media/02782b05-c4f8-4724-bc42-4ef79d51a424/88-innichner-sonderseiten.pdf>



**Fig 2** Part of the locations affected by the Drava flood in 1827 that are discussed in the article

reached up to the first floors of houses. The news stated that the water level of the Drava in that area was not so high since 1823.<sup>11</sup>

In June 1827, the Drava caused a great flood in some parts of Carinthia. The tributaries of the Drava in Carinthia, such as Gail (Zilja) and Lavant (Labotnica), also caused floods that year. In the reports we find claims such as: “The water level in all rivers and streams has reached almost unprecedented heights.” In Villach (Beljak) the streets were partially under water and houses were flooded with water several feet high. Because the Drava could not receive the water of the Lavant (Labotnica), the area of the settlement of Lavamünd (Labot) “almost turned into a lake”. Bridges on the Drava River near Hollenburg Castle (Humberk) and in Völkermarkt (Velikovac) were also damaged.<sup>12</sup>

A chronicler from Vuzenica in Carinthia reports that on 9 June 1827 the Drava River was only one foot lower than the flood of 1823, when the water was “five meters above the normal level.”<sup>13</sup> This would mean that in the area between Dravograd and Maribor, the flood of 1823 was somewhat more intense than that of 1827. However, in Maribor, the water of the Drava swelled in June 1827 and destroyed the bridge.<sup>14</sup> This is confirmed by a modern report from Zavrč, which states that the bridges in Maribor, and also in Ptuj, were completely destroyed in that flood, and that the water at that time was “3 to 4 fathoms high” (about 5 meters).<sup>15</sup> Due to the melting of the snow, the Drava grew from May 15 to June 9, 1827, when in Ptuj it “reached a height of 4 ½ feet (*Schuh*), which was the highest level at that time.<sup>16</sup> In Središče ob Dravi, on 10 June 1827, a sudden rise in the water of the Drava River was recorded, and it seems that the intensity of the flood in 1827 was lower than in 1823, where there was a “terrible flood” in the autumn when “far and wide everything was under water.”<sup>17</sup>

<sup>11</sup> *Kaiserlich-Königlich privilegirter Bothe von und für Tirol und Vorarlberg*: Innsbruck, br. 40, 17. svibnja 1827.; Sonklar, Karl. *Von den Überschwemmungen : enthaltend eine Beschreibung, Chronik der Überschwemmungen und Mittel der Abwehr*, Wien-Pest-Leipzig: Hartleben, 1883., 98-99.

<sup>12</sup> *Der Oesterreichische Beobachter*: Wien, br. 173, 22. lipnja 1827., 815.

<sup>13</sup> “Am 9. Juni 1827 war dieser Draufuß nur um ein Schuh kleiner als 1823”. Mravljak, Josef. “Große Ueberschwemmungen der Drau (Ein Beitrag zur Geschichte von Vuzenica—Muta.)”, *Marburger Zeitung*: Maribor, br. 67, 258, 13. studenoga 1927., 2–3.

<sup>14</sup> *Luna Agrarers Zeitschrift*. (Zagreb), br. 49, 19. lipnja 1827.

<sup>15</sup> Leskoschek, Franz. “Schiffart und Flößerei auf der Drau”. *Zeitschrift des historischen Vereines für Steiermark*, 63, Graz, 1972., 143.

<sup>16</sup> Zgodovinski arhiv Ptuj, SI\_ZAP 0070/0042, Povoden, Simon, 1821, I, 277; describing the floods in Ptuj in 1823 and 1827 Nataša Kolar wrote: “The entire lower part of the city was under water all the way to Florian Square. The water level of the river was so high that boats drove along Minorite Square and through the streets on the left side of the Drava. To its right, in the suburban municipality of Zgornji Breg, water flooded the ground floor houses all the way to the ceiling.” Kolar, Nataša. “Ptuj, urejanje in varovanje mesta od 1800. do 1914.”, *Ekonomska i ekohistorija*, vol. 15, br. 15, 2019., 74.

<sup>17</sup> Kovačić, Fran. *Trg Središče. Krajepis in zgodovina*. Maribor: Zgodovinsko društvo za Sl. Št., 1910., 571..



Fig 3 Data on the flood of the Drava near Sillian in Tyrol in 1827

## FLOOD OF THE DRAVA RIVER IN JUNE 1827 IN CIVIL CROATIA AND ZALA COUNTY

Since we do not have data on the flood of 1823 for this area, in the part of the Drava River flow through civil Croatia and Zala County we can consider the one from 1827 to be the most devastating recorded flood. The Drava River caused a great flood in Varaždin, most likely on 9 June 1827.<sup>18</sup> After an “unprecedented winter”, a large amount of snow in Tyrol melted sharply due to warm weather accompanied by rain. An eyewitness wrote that the Drava overflowed from the source, bypassing “the barriers that human diligence set in the unequal struggle”. The high water level caused devastation in all places, and near Varaždin the river broke through the dam and headed towards the city. The flood “reached a height no one remembered.” Houses in the lower suburbs “were deep under water”. People barely escaped through the rooftops. “Several weak buildings were taken away, planks, fences, fruit trees, household furniture and crops were taken over waterlogged gardens, meadows and fields, most of the basements in the city centre were filled with water.” All bridges, except the strongest and the largest one, were partially dismantled and destroyed, partly torn off. “The largest bridge was damaged because it lost six pillars and the right bridgehead. In several places, the river destroyed the road embankment. Six mills moored along the river were torn down, and only smaller parts of them were found after a few hours. Like Varaždin, “countless other places in nearby and distant provinces” were flooded. Ladislav Ebner wrote: “May heaven send consolation and help to those that in times of need protected my beloved hometown from elemental destruction!”<sup>19</sup> Rudolf Horvat writes that the people of Varaždin were asleep at the time of the flood, so the morning found them in a difficult position because the water in the houses reached the belt level, “somewhere it even reached up to the door”. Furthermore, “from many flooded houses, the people of Varaždin had to rescue the injured over the rooftop into the secured boats.” The water also broke older or poorly built houses and outbuildings.<sup>20</sup>

<sup>18</sup> Pihler, Lujo. “Hirovita Drava uzrok mnogih nevolja u prošlosti”. *Varaždinske vijesti*: Varaždin, 17. studenoga 1945., br. 27, 3. The exact date of the flood in Varaždin in 1827 should be determined by future research.

<sup>19</sup> Ebner, Ladislav. *Historisch statistisch topographische Beschreibung der königl. Freystadt Varasdin*. Varasdin: gedruckt bey Joh. Sangilla, k. k. priv. Buchdrucker, [1827], 93-95. Damage to the bridge is mentioned in the newspaper of the time, for example *Kaiserlich-Königlich privilegierte Bothe von und für Tirol und Vorarlberg*: Innsbruck, br. 54, 5. srpnja 1827.

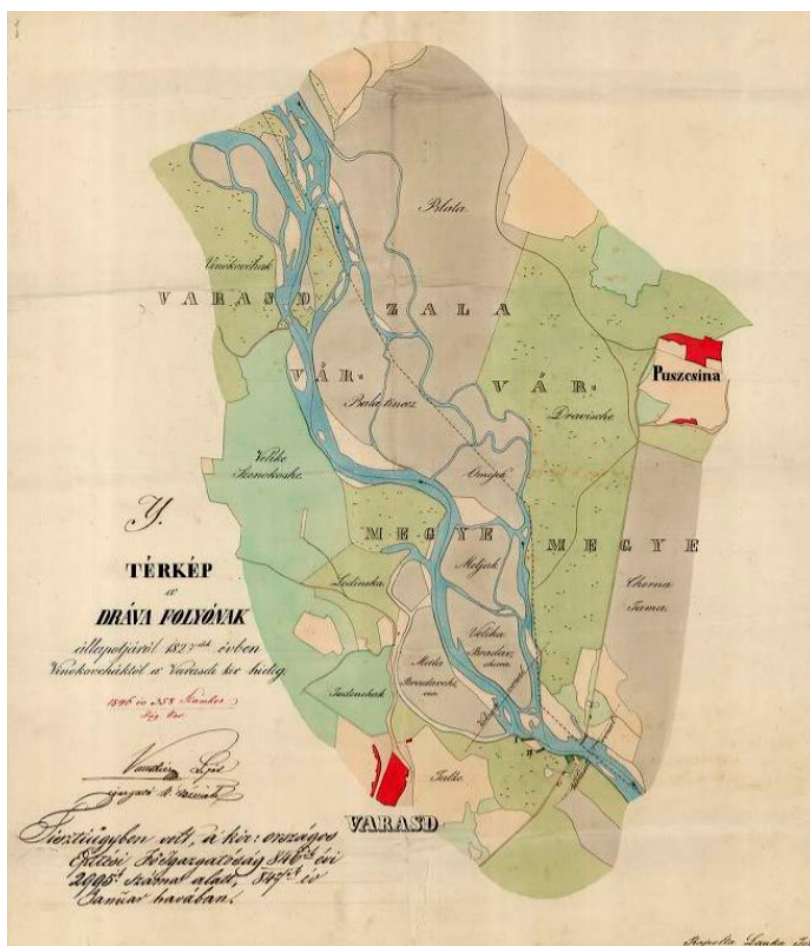
<sup>20</sup> Horvat, Rudolf. *Povijest grada Varaždina*. Varaždin: Hrvatska akademija znanosti i umjetnosti Zavod za znanstveni rad – Varaždin i Grad Varaždin, 1993., 290.



„Bestern hatten wir seit dem 4. d. M. den ersten regenfreien Tag. Die Berichte, welche über die Folgen der vorangegangenen fast ununterbrochenen Regengüsse aus allen Thälern unseres Landes einlaufen, sind seit Jahren, selbst den Herbst 1825 nicht ausgenommen, die traurigsten. Der Wasserstand in allen Flüssen und Bächen hatte eine fast beispiellose Höhe erreicht. Die meisten Brücken sind entweder ganz oder theilweise weggerissen, selbst die Haupt-Commerzstraßen, wo sie näher an den Flüssen und Gebirgsbächen fortlaufen, an mehreren Orten zerstört und unbrauchbar gemacht worden, nicht zu gedenken des Schadens, der bei Hämmern, Mühlen und überhaupt Wasserbauten angerichtet wurde. Der Postenlauf wurde dadurch unterbrochen, die Eil- und Postwagen kamen um mehrere Tage später. — Am fürchterlichsten wütheten die Lavant, Sill und Drau. Die etwas niedriger liegenden Häuser und Gassen in Villach und Wolfsberg standen mehrere Schuh tief im Wasser, besonders litt Lavamünd viel durch den hohen Wasserstand der Drau, die ihrer Höhe wegen die Wogen der reißenden Lavant nicht aufnahm, sondern zurückschwellte, und so den Ort beinahe in einen See verwandelte. Die Hollenburger, die sogenannte neue, und die Brücke bei Völkermarkt über die Drau, ferner die Brücke über die Gurk am Christophhofe auf der Haupt- Poststraße nach Völkermarkt, die Mißbrücke, und mehrere andere Brücken auf Seitenstraßen haben mehr oder weniger Joche verloren, und die brausenden Wogen dieser Flüsse wühlten sich an manchen Stellen ein ganz neues Flußbeet, so daß kaum erst nach Wochen die vorige ordentliche Communication wird hergestellt werden können. Eben so ist die Waltensteiner- und St. Gertrauder- Straße im Twinkberger Graben ganz zerstört worden. Uns näher haben die Gurk und Sill die ihnen nebenliegenden Niederungen dergestalt überschwemmt, daß man in diesem allgemeinen See nur durch die stärkere Strömung das eigentliche Flußbeet unterscheiden konnte. Der Wer-

**Fig 4** Report from the *Österreichischer Beobachter* newspaper about the flood of the Drava River in Carinthia in 1827

Silbernen.  
Lautbach den 11 Juny.  
Die seit acht Tagen fast ununterbrochen fortbauenden Regengüsse haben überall einen ungemein hohen Stand der Gewässer zu Folge gehabt, und hemmen gänzlich die freye Passage. Seit zwey Tagen fehlen uns die Wienerposten, weil die Mursbrücke bey Ehrenhausen so beschädigt seyn soll, daß sie nicht befahren werden kann. Die hochangeschwollene Drau hat bey Warburg ein Joch der dortigen Brücke mit fortgerissen, und das Warburger Postpaket konn-



**Fig 6** Map of the Drava near Varaždin in 1827

**Fig 5** Newspaper from 17 June 1827 about how the bridge on the Drava in Maribor was demolished

The Drava flood was recorded in 1827 on the outskirts of the village of Đelekovec.<sup>21</sup> According to the record in the testimonial of the parish of Legrad, the flood of the Drava River occurred on 10 and 11 of June 1827, when it was recorded: “the water was so high that the height of the water overflowed the flood of 1814.” The parish priest of Legrad, fearing for the sacrament, stored it in the chapel of St. Mihovil on Legradska gora, which was safe from floods due to its position. Among other things, almost 100 wooden houses were destroyed in Legrad at the time, and two people drowned “in waves”.<sup>22</sup> Unfortunately, the register of deaths of the parish of Legrad for the year 1827 is not available, and at the moment we can not determine the names of the drowned, the date of death and other information about these unfortunate events. The attached illustration depicts a segment of a map showing the extent to which Legrad was flooded during the flood in 1827.<sup>23</sup>

<sup>21</sup> Arhiv rkt. župnog ureda u Đelekovcu, Spomenica župe Đelekovec.

<sup>22</sup> Arhiv rkt. župnog ureda u Legradu, Spomenica župe Legrad. Records from parish testimonials in this paper are presented in quotation marks, although it is a translation from Latin into Croatian.

<sup>23</sup> Magyar Nemzeti Levéltár/National Archives of Hungary, Budapest, S 80 Téképek (18. sz.-20. sz.), S Vízrajzi Intézet (18. sz.-20. sz.), Dráva hossz-szelvény, No. 58/1.



A review of the registry books of the deceased of the Roman Catholic parishes in the settlements of Brod, Kloštar Podravski, Kozarevac, Peteranec and Virje did not reveal any death facts that would indicate death caused by drowning due to the flood of the Drava River in June 1827. Future research should review the entries in the available death registers for all parishes along the Drava River in order to collect data on cases of drowning due to the respective flood.

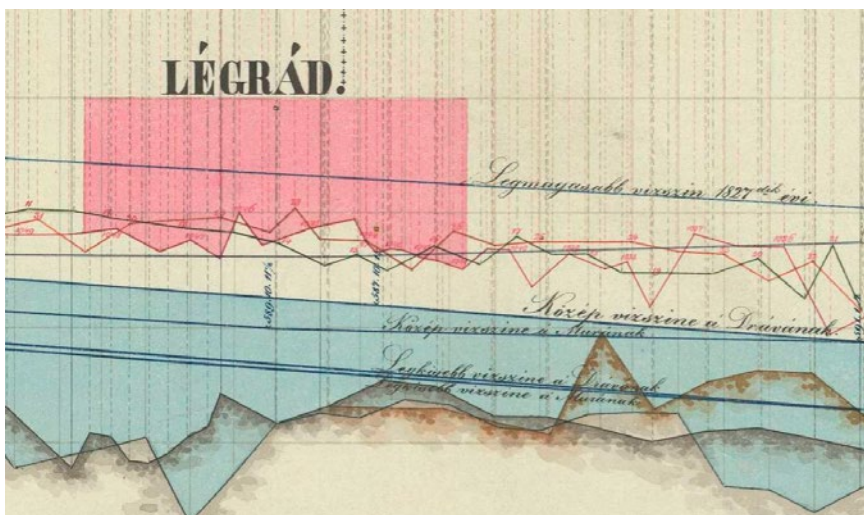


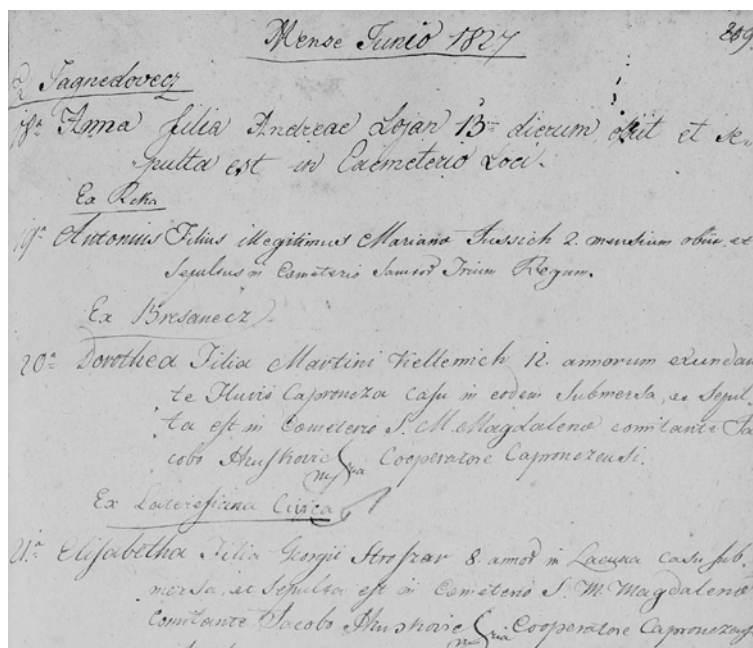
Fig 7 Drava water level in 1827 near Legrad

1827. Decembris 11. Campi quibusdam accipientia tanta die  
 que in Bide abundantiam elundant Aquarum An. 1827 post  
 vero, per modum Cuius Ambitum fluit aqua, unde facile De Bar  
 congrege est totum Forosorum una cum quibus Oppid. fuit  
 Aquis quibus hac occasione corruit multitudo mortali. Et hinc  
 certis Cordonia Birkman, et alia prope eos Dony lignos.  
 Proter animalia multa, quae perierant, ingenium duo  
 personarum in ludi sepulta. Ego Presbiter periculum  
 pontificem extremum totius oppidi huius elidit. Tronitru  
 manifestata est pluviae Culpae Barchabiz in Cyro  
 transposui ad Capellan. S. Michaeli in Bronostorio.  
 Campi et agri ut per litem est mandata fieri  
 quo nulla proccatio hoc Anno fuerit, sed sic  
 ad ultimam Episcopatum Legradense quolo positi, Res  
 dicando Britan. Et huc conservare unice, pauperibus pettan  
 Decisione hac Sento Theophoria Divina in Ca. the  
 S. Michaeli, in fronte aegradensi. Durochiani d. d.

Fig 8 Testimonial of the parish of Legrad about the flood in 1827

Quinquam fluvius Dravus nova canali, et aggeribus  
 necessariis fuit in meliorem ordinem redactus, periferia  
 Gyekovcensis magnis elundationibus fuit obnoxia, ita  
 anno 1814 anno 1827 die nocte campand pulsa  
 bantur, quo homines conveniant et circa circum Gyekov  
 Kovci majorer et majorer aggerem struant.

Fig 9 Testimonial of the parish of Đelekovec about the flood in 1827



**Fig 10** Records in the register of deaths about drowning during the flood of the Koprivnica stream and in some pond in 1827

## FLOOD OF THE DRAVA RIVER IN 1827 IN THE MILITARY FRONTIER

The testimonial of the parish of Peteranec about the catastrophic flood of 1827 reads: “There was such an unprecedented flood that on 11 June the inhabitants of Sigetec were brought to the first house in Peteranec by boats and vessels. On that occasion, in the blink of an eye, the magnificent bridge in the neighboring provincial village of Botovo, which connected Hungary with Croatia and which shortly before this accident cost the state treasury more than three hundred thousand, was destroyed by an indomitable element. This caused irreparable damage to the whole of Croatia due to the broken connection at that time, and especially the parishioners of Peteranec felt the sad consequences of the lost charity, for they owned larger and better estates across the Drava than at home, and they had to carry the ripe fruits of their bloody sweat in boats and vessels, losing time and subjecting their lives to severe danger. During this misfortune, an entire estate of the village of Drnje was flooded, and its inhabitants, leaving the devastated homes inherited from their grandfathers, settled down and built new houses on the meadows towards Sigetec and Peteranec, which were granted to them by the benevolent authorities.”<sup>24</sup> The demolition of the bridge in the flood of the Drava River near Botovo is also mentioned in the conclusions of the Croatian Parliament.<sup>25</sup>

“During the Feast of the Holy Trinity (June 10, op. Cit.), the river Drava swelled so much that it flooded the entire Drnje and again caused great damage to some streets. The water rose so high that all the streets were flooded. Only the church and the cemetery, the two highest points, were on dry land. The people were very upset, they drove their livestock to the cemetery and waited for the water to fall, whereas the church could only be reached by boat.”<sup>26</sup> In the neighbouring village of Sigetec, the pastor wrote about the flood: “In 1827, in the eighth of the Corpus Christi, there was such a flood of the Drava River that people had to flee the village and the water of the Drava flowed in all places like a torrent, which would increase significantly during the rains, but did not penetrate the church. The flood that took place in September 1812 can not be compared to this one.”<sup>27</sup>

<sup>24</sup> Arhiv rkt. župnog ureda u Peterancu, Spomenica župe Peteranec. Komorčec, Dragutin. *Kronika: 200 godina crkve u Peterancu: 1773-1977*, Peteranec. vlastita naklada, 1973, 21.

<sup>25</sup> Barbarić, Josip i drugi. *Zaključci Hrvatskog sabora*, Zagreb: Arhiv Hrvatske u Zagrebu, sv. XII, 1980, 91.

<sup>26</sup> Arhiv rkt. župnog ureda u Drnju, Spomenica župe Drnje; Osnovna škola “Fran Koncelak”, Spomenica škole, I, 8-9.

<sup>27</sup> Arhiv rkt. župnog ureda u Sigecu, Spomenica župe Sigetec.



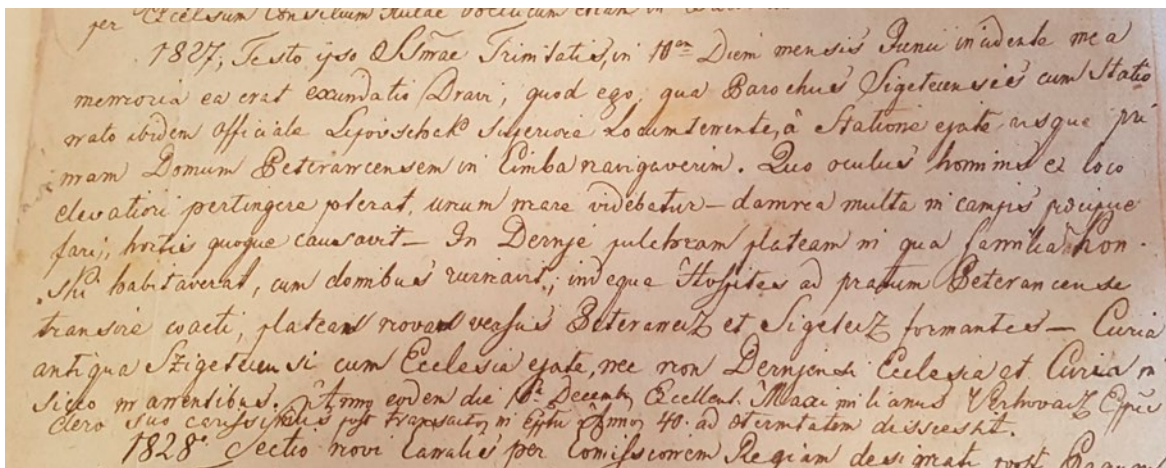


Fig 11 Description of the flood of the Drava River in 1827 in the testimonial of the parish in Drnje

In the testimonial of the Roman Catholic parish in Hlebina, the following is written about that flood: “On Saint Barnabas Day on June 11 in the evening a terrible flood of the Drava occurred, heading from Drnje to Hlebina along the state road like a huge river, so that the entire upper part of the village towards Sigetec was flooded in the middle. People fled the houses with children, cattle and other things, moaning and wailing, partly to the east side, and partly to the vineyards and neighbouring villages, where they were forced to live miserably. The water in the village of Hlebina reached 3 fathoms (elbows), so from the crucifix in the middle of the village, Captain Senjan, company commander together with ensign Horvat could reach Hlebina by ordinary boat on the state road all the way to the Drnje boundary of Drava.” Pastor Jakob Antol added: “As an eyewitness, I had to mourn the great flood in the village that day, and I received people and livestock in my parish yard because it was in an elevated position ... What can I say about the fields, which abounded in fish instead in grain, haymakers did not give any hay, instead of eight wagonloads of hay at the parish hayfields we did not get a single bundle of hay ... Free us Lord of thunder and storms causing the Drava flood and save us.”<sup>28</sup>

Data on the flood of the Drava River in 1827 have been recorded in many written historical sources. The parish priest in Đurđevac, Franjo Milinković,<sup>29</sup> described this flood in a few sentences in Latin on the pages of the parish testimonial. He writes about the predatory river Drava that overflowed its banks on 12 June 1827 and flooded the whole of Podravina (*tota Podravnam*) and that it was an unprecedented flood in people’s memory. The pastor was especially affected by the fact that there was more than one meter of water in the parish garden and on the lawn, and the basement and some other rooms of the parish house were flooded. Special care was then given to the new parish church, so the pastor wrote that all entrances to the church were secured and barricaded so that water would not enter the interior. The pastor then rode on a boat from the parish house to the church, thus exposing himself to danger. In doing so, he saw many animals drowning in the water, which happened to some people as well. This is certainly an exaggerated experience because no death by drowning of any resident of Đurđevac was recorded in the registry books. The pastor writes that the flood caused damage to crops, hayfields, vineyards and generally inflicted misery on the inhabitants of Podravina.<sup>30</sup>

It is not clear why Pastor Milinković wrote that some people drowned during the flood when he did not document it in the register of deaths. However, one case of death in Đurđevac in June 1827 can be related to the flood. On 14 June 1827, the death of a 25-year-old soldier and clerk Josip Topolčić, who

<sup>28</sup> Arhiv rkt. župnog ureda u Hlebinama, Spomenica župe Hlebina.

<sup>29</sup> Cik, Nikola. “Đurđevčki župnik i zagrebački kanonik Franjo Milinković (1789. - 1860.)”. *Podravski zbornik* 44/2018. (ur. Robert Čimin). Koprivnica: Muzej grada Koprivnice, 2018., 19-26

<sup>30</sup> Arhiv rkt. župnog ureda sv. Jurja u Đurđevcu, Župna spomenica od godine 1825.

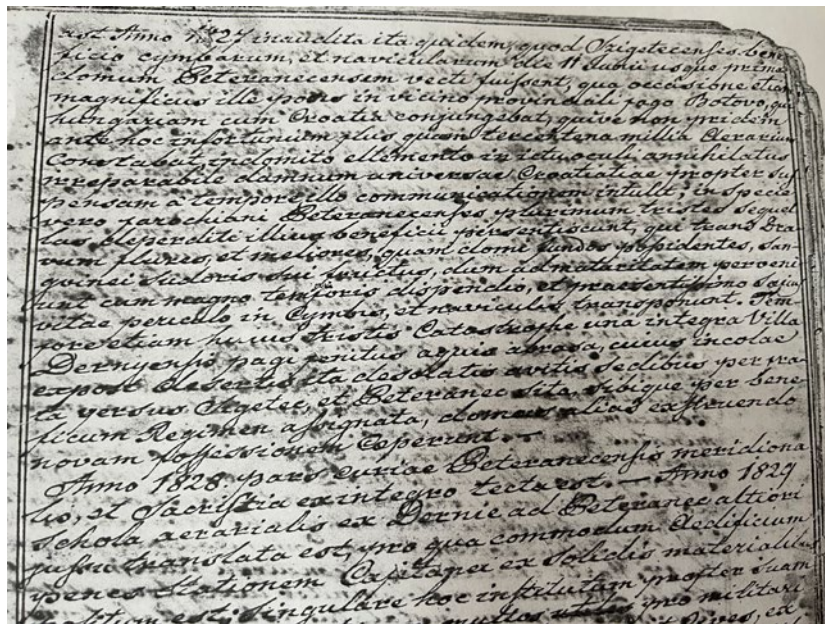


Fig 12 Testimonial of the parish of Peteranec about the flood in 1827

drowned while swimming in the Krnišćak canal, was recorded in Đurđevac. His body was found only 5 days later on the shore of the said canal.<sup>31</sup>

The testimonial of the parish in Molve, a village located along the Drava River, has been kept since 1846, so the first entries were made almost two decades after the great flood of the Drava River in 1827. However, as the first pages of the parish testimonial describe the geographical location and the past of the village of Molve, the influence of the Drava River and its wetlands on the

development of the settlement is mentioned several times. Therefore, it is to be expected that the memory of the flood of 1827 was also recorded. It is indeed mentioned in the context of the reclamation of this area that followed that great flood.<sup>32</sup> It is interesting that the author of the description of the village of Molve placed the flood of the river Drava in 1827 in the context of the simultaneous floods of the rivers Sava and Mura. This is probably a reflection of the later cognition that in those years there were great floods of other rivers as there were earlier in 1770.

The village of Brod was located on the very right bank of the Drava River in the Military Frontier, and it was displaced during the later floods of the Drava River in the 1840s. We can assume that the flood of the Drava River in 1827 significantly affected the inhabitants of the village of Brod. Historian

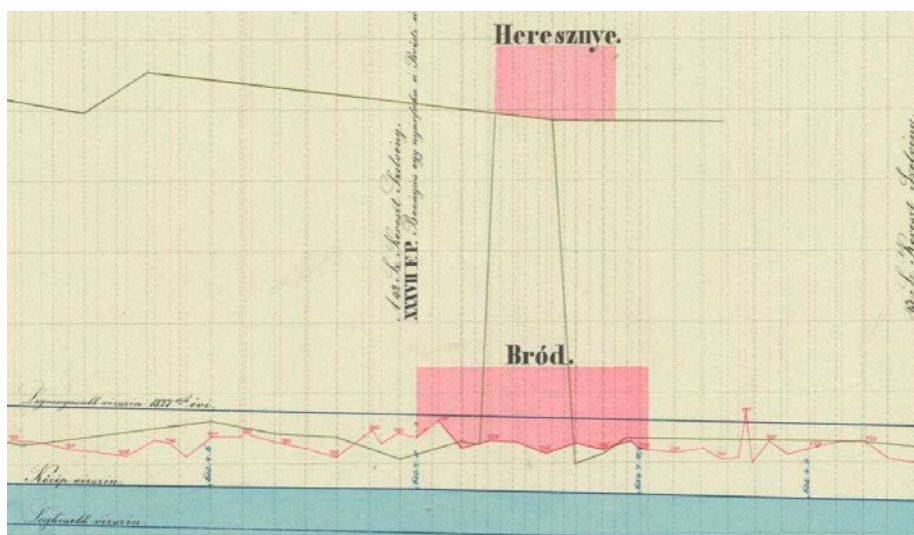


Fig 13 Marking the water height of the Drava near the villages of Brod and Heresznye in 1827

<sup>31</sup> Nadbiskupijski arhiv u Zagrebu, Parice matične knjige umrlih rkt. župe sv. Jurja u Đurđevcu, 1827. godina.

<sup>32</sup> Arhiv rkt. župnog ureda Uznesenja BDM u Molve, župna spomenica.

Paškal Cvekan published data that two floods were recorded in Brod in 1827. The flood was less intense on 15 May, and stronger on 13 June. "The water filled the houses and barns, and it was 2 ells high in the church. It ruined the whole harvest. The bees died and the people of Brod had to move to the surrounding villages because they had nothing to live on."<sup>33</sup> The attached illustration is a segment of the map showing that during the flood of 1827 the village of Brod was completely flooded, unlike the neighbouring village of Heresznye, which was spared from the flood at that time.<sup>34</sup>

It can be concluded that the flood of the Drava River in June 1827 primarily had negative effects on economic conditions in the village of Brod. There were no human casualties, perhaps because the inhabitants of the village, located on the Drava bank, were accustomed to the river overflow and had established patterns of behaviour in cases of flooding.

## ABOUT THE FLOOD OF THE DRAVA RIVER IN 1827 IN BARANJA AND SLAVONIA

From the two letters written by the Siklós chief judge Ignac Mitterpacher dated 21 June 1827, we can learn that the water level on the Drava River was constantly rising for eight weeks, which would be contrary to the description of the flood around Varaždin which suggests a sharp rise in water levels. One of the breaches of the embankment on the Drava River took place near the village of Martince (Felsőszentmárton), where great damage was recorded when the Drava River ravaged the Siklós district and completely destroyed some parts of it. Mitterpacher writes that they could only indicate the damage, but not pinpoint it "since the torrent destroyed all the bridges." The problem was that the Drava water came at high speed and merged with the Feketevíza water, destroying the fields that belonged to the villages: Bogdašin, Oszró, Kiscsány, Nagycsány, Vajszló, Bešence, Sámód, Páprád and Hídvég. "If the dear God does not have mercy, the torrent will even reach Siklós, because the water has reached the forest of the village of Ipacsfa, which is a three-quarter hour walk to Siklós, so we should be afraid that the water of the Drava and Feketevíza will destroy Harkany spa." On 14 June 1827, it was recorded that the Drava broke through the embankment in the area of the village of Vertiga (Sósvertike) and flooded the villages of Drávaiványi, Zaláta, Kemse and Piskó along with their fields.<sup>35</sup> A wooden church in the village of Zaláta was also damaged in the flood.<sup>36</sup>

Mitterpacher writes that with superhuman efforts near the villages of Hirič (Hirics) and Oldinac, the Drava broke through the embankment and "overflowed with such force that it crossed our embankments almost everywhere with the greatest speed and caused great damage and devastation in this Siklós district." At the time of writing the letters, the embankments had been under water for more than a week. County officials divided the injured residents into two groups. The first group comprised those settlements "where there was no bread left for everyday life, where there were no cattle left, where water destroyed crops, hayfields and pastures, and where most houses were destroyed, where everything was extremely devastated." The second group included settlements "whose fields were flooded by the Drava River, whose cattle died, but some crops remained." The description says that "on one side the grieving son of the people wept over the great misery, on the other side the cattle were bleating with hunger."

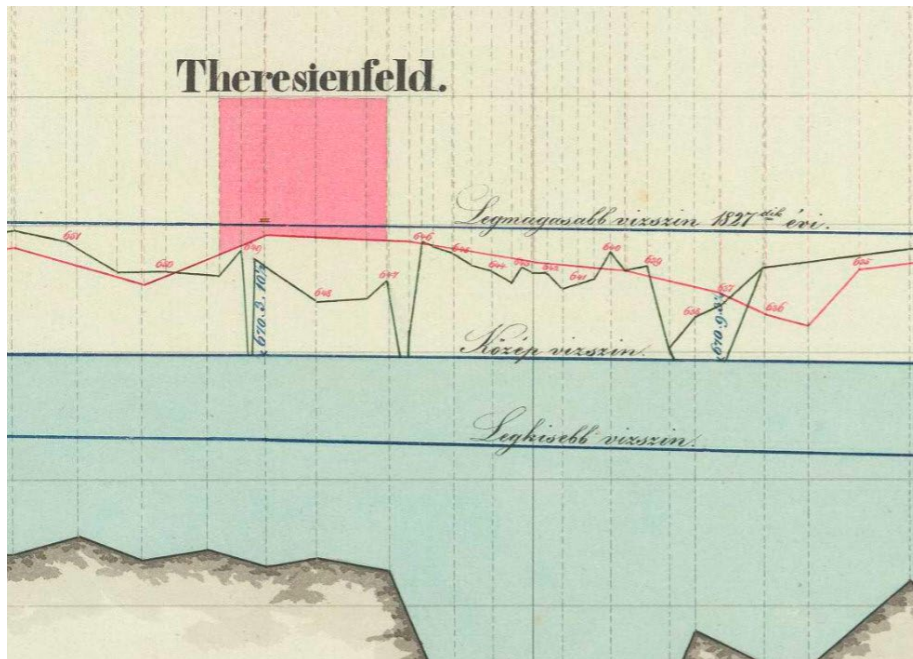
<sup>33</sup> Pavao Vuk was the administrator of the parish from 1828, and from 1829 to 1843 he was the parish priest of Brod, he wrote to the military authorities that the floods of 1833, 1836, 1840 and 1843 endangered the whole village and demanded that the Drava be regulated and canals constructed. He suggested that the whole village be moved to a more suitable place. This was done in 1844, when the village of Brod was abandoned and the new village of Ferdinandovac was founded. Cvekan, Paškal. *Ferdinandovac. Od Broda na Dravu do Ferdinandovca u močvari*. Ferdinandovac: Općina Ferdinandovac, 1996., 40-41. O selu Brod usp. Cik, Nikola. "Utjecaj rijeke Drave na naselja u đurđevačkoj Podravini - primjer sela Brod u 18. i 19. stoljeću". *Ekonomska i ekohistorija, časopis za gospodarsku povijest i povijest okoliša*, vol. XIII., broj 13. Zagreb, 2017., 36-46.

<sup>34</sup> Magyar Nemzeti Levéltár/National Archives of Hungary, Budapest, S 80 Térképek (18. sz.-20. sz.), S Vízrajzi Intézet (18. sz.-20. sz.), Dráva hossz-szelvény, No. 58/6.

<sup>35</sup> Magyar Nemzeti Levéltár Baranya Megyei Levéltára, Pécs, Közgy. Ir. 1422/1827; Kiss, Géza. "Ekologija Podravine – podaci iz Ormánsága". *Etnografija Hrvata u Mađarskoj*, vol. III, Budimpešta, 1996., 93.

<sup>36</sup> That church was destroyed in the flood of 1770. The new church had to be built of brick and was completed in 1834. *Dunántúli Napló*, 7. travnja 1976.





**Fig 14** The highest water level of the Drava in 1827 near Terezino Polje



**Fig 15** The village of Tomašín (Drávatamási) was not affected by the 1827 flood

Mitterpacher writes: “The Drava River not only devastated the places along the river, but also the more distant ones. It demolished houses in Csepel, and the areas of the villages of Kásád, Matti, Drávaszabolc, Drávapalkonya, Kovácshide, Ipacsfe and some other settlements were flooded. In Csehi-puszta and Tišna (Tésenfa) the Drava demolished several houses, and in Drávapalkonya the county house was demolished.”<sup>37</sup>

For the civil part of Slavonia, there are only isolated data on the flood of 1827, and in future research it will be necessary to make a more detailed analysis. From the collected data we enclose a map indicating that during the flood of 1827, Terezino Polje was minimally flooded.<sup>38</sup> The flood of 1827 was also recorded in the Franciscan monastery chronicle in Virovitica in May and June of 1827. “In that flood,

<sup>37</sup> Kiss, Géza. “Ekologija Podravine – podaci iz Ormánsága”, 93.

<sup>38</sup> Magyar Nemzeti Levéltár/National Archives of Hungary, Budapest, S 80 Térképek (18. sz.-20. sz.), S Vízrajzi Intézet (18. sz.-20. sz.), Dráva hossz-szelvény, No. 58/9.

the Drava broke through and levelled the embankment in 17 places, destroyed many houses... and only spared some bridges here and there.”<sup>39</sup>

As is the case with other floods of the Drava River, the flood of 1827 was recorded in sources originating from Osijek as well.<sup>40</sup> There, the Drava overflowed its banks on 15 June 1827 and flooded the entire area. In addition, a torrent of water tore down bridges and some poorly constructed buildings such as barns. It was a flood that reminded the people of Osijek of the one that happened in 1814. The consequences of the flood were mostly felt in the economy because the hay for cattle and crops in the fields was ruined. The chronicler of the Franciscan monastery in Osijek wrote about the flood: “This month the Drava swelled so much that it left its bed and spread widely in the fields, so that from everywhere it looked like one big sea, and the intensity of its flow was such that in Tvrđa at Krunska utvrda (Crown fortress) it uprooted the bridge, as well as at Bilje, and destroyed them completely. It entirely deprived people of much-needed hay for horses and cattle, flooded several buildings, partly houses, and razed the military magazines in Tvrđa to the ground, also causing many other accidents, reminiscent of the sad and unheard of destruction of the Drava in 1814, from which misfortune may we be saved by our dear God.”<sup>41</sup>

### SOME ANSWERS RELATED TO THE FLOOD OF 1827

The bibliography mentions that after the flood of 1827, the construction of an embankment in the area from Varaždin to Osijek began.<sup>42</sup> In part, it was most likely the repair of existing embankments that were breached in about 18 places in the flood of 1827 in Hungary.<sup>43</sup> In any case, the catastrophic floods of 1827 prompted extensive regulatory work on the Drava River, which was intensified by a decree of the Royal Regulatory Commission from 1833. The flood of 1827 unequivocally indicated and proved the local character and the failure of previous regulations. Between 1842 and 1846, the first hydrographic survey of the Drava River was carried out. It is envisaged that the river from Zakány to its estuary will be divided into four straight sections by regulatory works. The works started with the construction of the main ditches on the basis of the so-called “German” principles. Andrija Bognar believes that it is quite clear that a watercourse with a natural water regime cannot be divided into straight lines, because due to the dynamics of water movement and the legality of these movements, as well as the different resistances of the lithological base, they would soon turn the straight route into a rhythmic one. That is why these regulatory works have failed despite huge material investments.<sup>44</sup> After the flood of 1827,

<sup>39</sup> Habdija, Tomislav. *Poplave i glad u drugoj polovici 18. i početkom 19. stoljeća u civilnoj Hrvatskoj i Vojnoj krajini*, diplomski rad. Zagreb, 2014., 81, 86.

<sup>40</sup> Živaković-Kerže, Zlata. “‘Ostavljajte sve, a spašavajte goli život’ - osvrt na plavljenja Drave od 18. stoljeća do 20. stoljeća”. *Ekonomska i ekohistorija*, vol. XIII, br. 13, 59.

<sup>41</sup> Sršan, Stjepan. *Osječki ljetopisi 1686.-1945*. Osijek: Povijesni arhiv u Osijeku, 1993., 144.

<sup>42</sup> Bulat, Mirko. “Dio rimske ceste Poetovio-Mursa u Podravini: (po rukopisu ing. R. Franjetića ‘Kako je mogao izgledati rimski limes duž Drave’)”. *Podravski zbornik 9/1983*. Koprivnica: Muzej grada Koprivnice, 1983., 264.

<sup>43</sup> Petrić, Hrvoje, Tamás, Enikő Anna, Lóczy, Dénes. “Flood History and River Regulation”. *The Drava River. Environmental Problems and Solutions*, Lóczy, Dénes (ed.), Cham: Springer, 2019., 109.

<sup>44</sup> Bognar, Andrija. “Geomorfološka obilježja korita rijeke Drave i njenog poloja u širem području naselja Križnica”, *Hrvatski geografski glasnik*, Zagreb, 2008., vol. 70, br. 2, 63-64. Bognar also writes that the dynamics of shaping the riverbed by cutting the meander and building various buildings for fixing the riverbed changes significantly in relation to the natural state in the period before 1784, when regulatory interventions began. The intersection of the meanders in their necks was reflected primarily in a significant shortening of the length of the stream. According to archival material, the meandering sections were on average about 9-18 m wide and 1.5-2.1 m deep, which means that they were not as wide as the natural riverbed. They called them “leading ditches.” As a rule, if the intervention was appropriate, it was soon extended to the natural dimensions of the riverbed by the erosion work of the water. The length of this process depended on the composition of the meander gate terrain, the width of the riverbed, the fall, the movement of water levels and whether the direction of intersection of the “leading ditch” corresponded to the hydraulic relations of the river in that particular part. This primarily refers to the coincidence of the direction of the “leading ditch” with the cut, more precisely with the so-called kinetic axis of the watercourse. The most common causes of meander crossing failure can be related to the occurrence of strong accumulation and formation of reefs at the exit of the section, due to insufficient protection of its banks from erosion activity of watercourses and mismatch of excavated ditch direction with kinetic axis of the river, whereas the river was diverted in a new direction of outflow by means of a crossbeam. “

the embankment over the village of Sigetec towards Drnje as defence against the current and the flood of the Drava was built in 1828 by the former governor and hydraulic manager of the Drava River, Josip Miljanović.<sup>45</sup> The works on the regulation of the Drava River continued between 1830 and 1848.<sup>46</sup>

The consequences of the flood of 1827 can be observed on the example of the villages of Drnje and Peteranec in Podravina. The consequences of the flood were most likely the cause of the trivial school being moved from Drnje to Peteranec in 1829, where the headquarters of the company were moved as well. That fact that the school was relocated that year can be seen from the examination report. In 1829, the last exams were held in Drnje, and the new school year 1829/1830 started in Peteranec.<sup>47</sup> In 1830, some other buildings in Drnje had to be relocated due to the danger of flooding of the Drava River.<sup>48</sup> Thus, for Drnje, a whole range of economic and central functions was lost, and an era of crisis, stagnation and even backwardness ensued, which can be seen in the decline in the number of inhabitants. Between 1826 and 1839, the total population of Drnje was reduced by almost one third, and Botovo by one seventh.<sup>49</sup>

Saint John of Nepomuk was protector from the floods, whose worship began to spread after the beatification (1721) or canonization in 1729.<sup>50</sup> His monuments were erected in many places along the Drava River in the 18<sup>th</sup> century,<sup>51</sup> but it is interesting to examine whether the worship of St. John of Nepomuk can be connected with the flood of 1827. Probably the flood encouraged the construction of the chapel of St. John of Nepomuk in 1836 near the public road not far from the bridge, where the old statue of this saint was placed. It seems that at about the same time the chapel of St. John of Nepomuk was erected in the neighbouring village of Botovo, which was also affected by the 1827 floods.<sup>52</sup>

## ABOUT SOME FLOODS OF THE RIVERS SAVA, DANUBE, MURA AND OTHER WATERCOURSES IN 1827

The floods of the Sava, Danube, Mura and their tributaries in 1827 require special analysis, so we will point out only a few of them merely, as a guide for future research. The chronicle of the Franciscan monastery in Brod records a rainy January in 1827, “causing the Sava River to swell too much and to continue to do so.” From 8 June and the following days, “heavy rains fell and there was a constant storm, so that already on the 18 June the Sava grew excessively, overflowed the coastal borders and completely flooded meadows and fields.” According to the record of 8 July 1827 “the Sava, which had long been spilled out of its bed, has now fallen to its usual level.”<sup>53</sup>

<sup>45</sup> Josip Miljanović (Virje, 13. ožujka 1796. - Sigetec, 21. ožujka 1838.), originally from an officer's family, he graduated from the military academy in Wiener Neustadt in 1806. As an ensign, he was in the service of the Đurđevac Regiment. He participated in the organization of the construction of the bridge near Botovo and Drnje, and in 1822 he was mentioned as a military officer in the regulation of the rivers Drava and Mura. As a lieutenant, he was a senior commander of the border station in Sigetec, where he died of tuberculosis. Hrvatski državni arhiv, Generalkomanda, Registri, br. 6, fasc. 1822/368; HDA, Zbirka matičnih knjiga, Matična knjiga krštenih župe Virje 1761-1806; Državni arhiv Varaždin, Zbirka matičnih knjiga, Matična knjiga umrlih župe Sigetec.

<sup>46</sup> Hrvatski državni arhiv, Hrvatsko-slavonski spisi kr. ugarskog namjesničkog vijeća, Acta commissariatica (vojni spisi), godina 1848, br. 164; Acta commercialia (trgovački spisi), fasc. 1, br. 3, fasc. 3, br. 105, fasc. 9, br. 995, 1011.

<sup>47</sup> Hrvatski školski muzej Zagreb, Arhivska zbirka, Škola Peteranec, Befehls Protokoll 1823-1842. (R 3407); Ehrenbuch 1829-1900. (R 3404).

<sup>48</sup> Hrvatski državni arhiv, Generalkomanda, kut. 45, br. R 39-18.

<sup>49</sup> Petrić, Hrvoje. “Utjecaj rijeke na pogranična naselja. Primjer rijeke Drave u 18. i 19. stoljeću”, *Ekonomika i ekohistorija* - časopis za gospodarsku povijest i povijest okoliša, vol. 1, br. 1., Zagreb-Samobor, 2005, 47.

<sup>50</sup> Cvetnić, Sanja. “Habsburški politički utjecaji i ikonografija sv. Ivana Nepomuka u Hrvatskoj”, u: *Hagiologija: kultovi u kontekstu*, Zagreb: Leykam international, 2008., 161-162.

<sup>51</sup> Majer, Krasanka. Pil svetog Florijana u Legradu”, *Kaj: časopis za književnost, umjetnost i kulturu*, vol. 43, 1-2, Zagreb, 2010., str. 122-126; Roth, Ivan. *Javni spomenici sv. Ivana Nepomuka u istočnoj Slavoniji*, Slavonski Brod : Hrvatski institut za povijest, Podružnica za povijest Slavonije, Srijema i Baranje, 2016.

<sup>52</sup> In the parish church in Drnje after 1762, a statue of Saint John of Nepomuk in the lobby is mentioned, and as of 1782 one of the side altars was the altar of Saint John of Nepomuk. Petrić, Hrvoje. *Općina i župa Drnje*. Drnje: Nakladna kuća dr. Feletar, 2000., 132, 149-150.

<sup>53</sup> Barbarić, Josip. *Kronika franjevačkog samostana u Brodu na Savi II (1806-1833)*. Slavonski Brod: Matica hrvatska – Ogranak Slavonski Brod, Hrvatski institut za povijest – Odsjek za povijest Slavonije, Srijema i Baranje, Franjevački samostan Slavonski Brod, Povijesni arhiv Slavonski Brod, 1997., 297, 301, 305.





Fig 16 Newspaper record of the flood of the Mura River in Graz in 1827

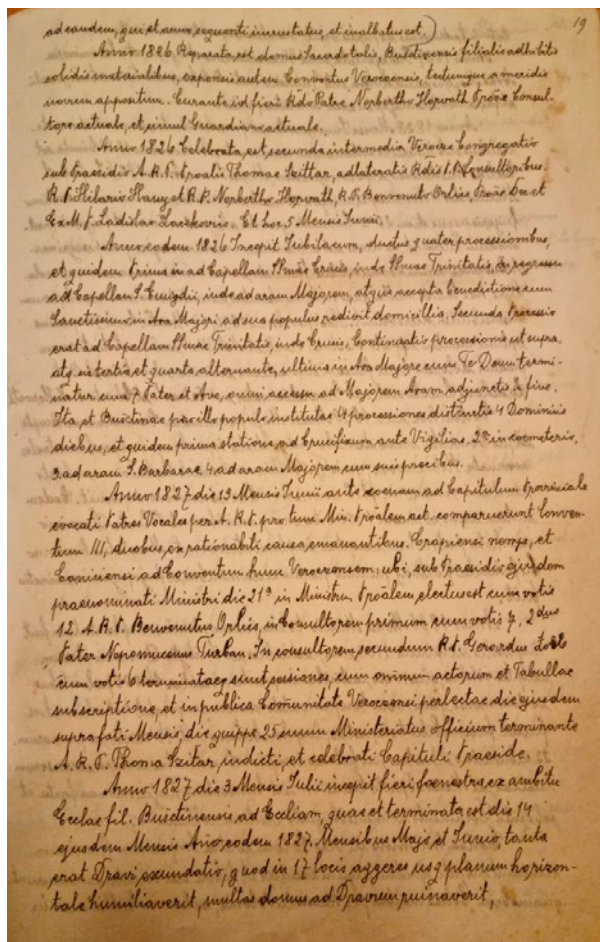


Fig 17 Record of the flood of 1827 from the testimonial of the Franciscan monastery in Virovitica

Two cases of drowning were recorded in June 1827 in Koprivnica. Namely, on 20 June 1827, a 12-year-old girl, Doroteja Kelemić, drowned in the swollen stream Koprivnica. The next day, 21 June 1827, an 8-year-old girl, Elizabeta Štrosar, drowned in a puddle (*in Lacuna*) in Koprivnica.<sup>54</sup> We can assume that these drownings were the result of a careless stay near the swollen watercourse and the remaining waters after the great flood of the Drava River.

A flood of the Danube was recorded in Šarengrad: “In 1827, beginning in the spring, there was a great flood of the Danube throughout the summer, which caused inconceivable damage to nearby neighbouring properties.”<sup>55</sup> Strong floods of the Mura in 1827 were also recorded, such as around Graz or Radgona,<sup>56</sup> however, they require more detailed analysis in a special study. In addition, in the Franciscan Chronicle in Našice they recorded “continuous rain” on 13 June 1827.<sup>57</sup> Let us also mention that in Zagreb, in Vlaška Street, a flood was recorded in the period from 17 to 20 April 1827.<sup>58</sup> It was obviously a flood of the Medveščak stream.

<sup>54</sup> Hrvatski državni arhiv, Zbirka matičnih knjiga, Matična knjiga umrlih rkt. župe sv. Nikole u Koprivnici, 1827. godina; Habdija, Tomislav. *Poplave i glad u drugoj polovici 18. i početkom 19. stoljeća u civilnoj Hrvatskoj i Vojnoj krajini*, diplomski rad. Zagreb, 2014., 123.

<sup>55</sup> Popbarić, Josip. *Ljetopis franjevačkog samostana u Šarengradu I (1683-1853)*. Šarengrad: Franjevački samostan Šarengrad, 2002., 303.

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## CONCLUSION

The flood of the Drava River in 1827 was one of the strongest floods, about which relatively many sources have been preserved. The article presents selected data from areas in parts of Tyrol, Carinthia, Styria, civil Croatia (Varaždin, Đelekovec), parts of Hungary (Zala and Baranja counties), villages along the Drava in the Military Border and Osijek. The analysed examples show that the flood of 1827 was visible along the entire course of the Drava River, with the intensity of the flood being different in certain areas. One of the cartographic sources marked the level of the flood of 1827 as the year of the strongest flood intensity downstream from Legrad. It should be noted that, at least according to available sources, the intensity of the flood was very strong in the area between Maribor and Osijek, including Baranja County. The effects of the flood of 1827 were also recorded in Tyrol and Carinthia, but currently researched data indicate that the floods of 1827 were weaker in those areas than the floods of 1823.

According to the available data, we can conclude that due to the flood, several people lost their lives in the settlements along the Drava, and there were probably more that should be looked for in historical sources. Certainly, this paper should serve as an incentive to study the impact on demographic trends, for which data should be collected from registry books created in the settlements along the Drava River.

Unlike Tyrol, Carinthia and Styria, for which we have preserved newspaper reports, in civil Croatia and the Military Frontier we generally did not find other sources in which to find reports other than sources of ecclesiastical provenance (parish testimonials and annals) containing the most abundant data in Zala County, and only a small segment of civilian Croatia and the Military Frontier. We are aware that this is only a part of the information found that provides only a segmental picture. Based on the data on the flood of 1827 preserved from the reports of Baranja County, the path to new research could be oriented towards searching for data in the archives of Zala, Varaždin, Križevci and Virovitica counties and military documents. Let us also mention that most other articles on the Drava floods of the 19<sup>th</sup> century have so far focused on flood research in only some parts of the river course, so the research on the flood of 1827 represents a contribution to research of one of more significant floods in this area from the first inhabited settlement almost to the river estuary. According to the scheme for classification of historical flood intensity, based on the classification and primary and secondary indicators, flood levels are proposed by numbers 1-3, where 1 is the lowest and 3 the highest. Based on the above, we can suggest that the flood of the Drava in 1827 could be allocated to the highest level of floods - 3.

## APPENDIX: ATTEMPT TO RECONSTRUCT THE FLOOD WAVE OF THE DRAVA RIVER BY INDIVIDUAL DAYS

Date of the 1827 flood	Flood-affected areas confirmed in historical sources
9 June	Vuzenica, Ptuj
10 June	Legrad, Drnje
11 June	Sigetec, Hlebine
12 June	Ždala
13 June	Brod
14 June	Sósvertike, Drávaiványi, Zaláta, Kemse, Piskó
15 June	Osijek

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## SAŽETAK

Autori u članku analiziraju podatke o poplavi rijeke Drave 1827. godine koji su zabilježeni u pisanim povijesnim izvorima nastalima u naseljima koja su bila pogođena poplavom, odnosno zabilježili su ih ljudi koji su doživjeli poplavu ili novinari. Poplava rijeke Drave 1827. godine bila je jedna od snažnijih poplava o kojoj je sačuvano relativno mnogo zapisa. Njen intenzitet je bio vrlo jak, osobito na prostoru između Maribora i Osijeka. Učinci poplave iz 1827. godine su evidentirani i uzvodno od Maribora, no trenutno istraženi podaci ukazuju da je na tome području poplava iz 1827. godine bila slabija od poplave 1823. godine. U posebnom dijelu prikazan je utjecaj poplave rijeke Drave koja se dogodila 1827. godine u naseljima u Tirolu, Koruškoj, Štajerskoj, civilnoj Hrvatskoj, ugarskim županijama Zala i Baranja, Vojnoj krajini i Slavoniji. Kako se većina drugih članaka o poplavama Drave 19. stoljeća do sada usmjerava samo na neke dijelova toka rijeke Drave, ovaj članak predstavlja i prilog istraživanja jedne od poplava na prostoru od prvog naseljenog mjesta nakon izvora pa gotovo do ušća. Poznavanje pojedinačnih jačih poplava na jednoj rijeci može poslužiti i kao prilog za istraživanje klimatskih promjena. Prema shemi za klasifikaciju intenziteta povijesnih poplava, su na osnovi klasifikacije, primarnih i sekundarnih indikatora predloženi nivoi poplava brojkama 1-3, gdje je 1 najniži, a 3 najviši nivo. Za poplavi Drave iz 1827. autori predlažu uvrštavanje u najviši nivo poplave - 3.

*Ekonomaska i ekohistorija*  
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Časopis za gospodarsku povijest i povijest okoliša

Journal for Economic History and Environmental History

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Izabrani primjeri poplava u srednjoj i  
jugoistočnoj Europi (19. – 21. stoljeće)  
*Selected examples of floods in central and southeast Europe*  
*(19<sup>th</sup>-21<sup>st</sup> century)*

Volumen XVII. / Broj 17  
Zagreb – Samobor 2021.  
ISSN 1845-5867  
UDK 33 + 9 + 504.3



**Nakladnici / Publishers:**

Društvo za hrvatsku ekonomsku povijest i ekohistoriju  
*Society for Croatian Economic History and Environmental History*  
Ivana Lučića 3, HR – 10000 Zagreb  
[sites.google.com/site/ekoekohist/](http://sites.google.com/site/ekoekohist/)

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**Sunakladnik / Co-publisher:**

Ekohistorijski laboratorij Centra za komparativnohistorijske i interkulturalne studije  
Filozofskog fakulteta Sveučilišta u Zagrebu  
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**UDK oznake članaka / Article's UDC markups:**

Ivica Zvonar

**Prijelom / Layout:**

Saša Bogadi

**Za nakladnike / Journal directors:**

Petra Somek, Hrvoje Petrić, Domagoj Tončinić

ISSN 1849-0190 (Online)

ISSN 1845-5867 (Tisak)

**Tisak / Print by:**

Bogadigrafika, Koprivnica 2021.

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**Tiskano uz potporu Ministarstva znanosti i obrazovanja RH**

**Print supported by Ministry of science and education of Republic of Croatia**

**Na naslovnici / Cover:**

Poplavljeni Vukovar 1965. godine

Ekonomsku i ekohistoriju referiraju:

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i ekohistoriju

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IZDAVAČKA KUĆA

Tiskano u Hrvatskoj – prosinac, 2021.