

THE CROATIAN CONTRIBUTION TO THE EXPLORATION AND MAPPING OF THE STATES OF MATO GROSSO AND PARANÁ

A CONTRIBUIÇÃO CROATA À EXPLORAÇÃO E MAPEAMENTO DOS ESTADOS DE MATO GROSSO E PARANÁ

MIRELA SLUKAN ALTIĆ | Senior research at the Institute of Social Sciences in Zagreb, Croatia. Assistant professor in the Department of History in the University of Zagreb. Member of the Commission on the History of Cartography of the International Cartographic Association (ICA).

RESUMO

Os irmãos Mirko e Stjepan Seljan foram exploradores croatas dos mais conhecidos. Entre 1903 e 1905, a convite do governo brasileiro, eles exploraram os estados de Mato Grosso e Paraná objetivando verificar a navegabilidade dos cursos de rios brasileiros e a construção de novas rodovias e linhas ferroviárias. Este artigo analisa os resultados do projeto de pesquisa original baseado nas análises dos diários originais da expedição, mapas manuscritos e esboços de campo.

Palavras-chave: Mirko e Stjepan Seljan; cartografia explorativa; Mato Grosso; Paraná; Croácia.

ABSTRACT

The brothers Mirko and Stjepan Seljan are one of Croatia's most well-known explorers. Between 1903 and 1905, at the invitation of the Brazilian government, they explored the Brazilian states of Mato Grosso and Paraná with the aim of the river training of the country's waterways and building of the new road and railroad communications. This paper reports about the results of the original research project based on an analysis of original expedition journals, manuscript maps and field sketches made by the Seljan brothers in Brazil.

Keywords: Mirko and Stjepan Seljan; explorative cartography; Mato Grosso; Paraná; Croatia.

RESUMEN

Los hermanos Mirko e Stjepan Seljan eram exploradores croatas de los más conocidos. Entre 1903 y 1905, por invitación del gobierno de Brasil, exploraron los estados de Mato Grosso y Paraná con el objetivo de verificar la navegabilidad de los cursos de los ríos de Brasil y la construcción de nuevas carreteras y líneas de ferrocarril. Este artículo analiza los resultados del proyecto de investigación original basada en el análisis de los diarios originales de la expedición, manuscritos mapas y croquis de campo.

Palabras clave: Mirko y Stjepan Seljan; cartografía exploratoria; Mato Grosso; Paraná; Croacia.

MIRKO AND STJEPAN SELJAN – CROATIAN EXPLORERS OF BRAZIL

The Seljan brothers are one of the most well-known Croatian explorers and cartographers who took part in numerous expeditions in Africa and South America. Mirko (Karlovac/Croatia, 1871 – ?/Peru, 1913) and Stjepan (Karlovac/Croatia, 1875 – Ouro Preto/Brazil, 1936) published several books in French, Portuguese and Spanish, describing their travels and the challenges they faced in their explorations and mapping work. As excellent public speakers, they were very popular in international circles, giving numerous lectures in Argentina, Paraguay, Mexico, Brazil, the United States of America, France, and Germany.

They both had a lot of field experience, and had been in frequent contact with cartography in the course of their education and professional work. Mirko Seljan went to a military academy where he learned the practice and skills of land surveying and map drawing. He spoke Romanian, Hungarian, Russian, Spanish, and French. After he had finished school, his brother Stjepan served in the Navy.¹ He sailed many seas, and learned how to use maps and observe the terrain.

After returning from an expedition in Ethiopia (1899-1902), where they had been in the service of Emperor Menelik II, and had produced the first topographic map of Ethiopia, their thirst for knowledge and exploratory spirits very soon took them on another journey.² With adventure in their blood, as mentioned by Stjepan Seljan, soon after returning to Croatia, they started to plan yet another journey, only this time to the wilderness of Latin America.

The continent had freed itself from colonial rule only a few decades earlier, and enterprising brothers estimated that their exploration projects could contribute to the economic and social development of the young states there. Moreover, Latin America at that time was a desirable destination for numerous Croatian emigrants looking for a better future in that part of the world, a fact which further reinforced their decision. They arrived in Latin America in April 1903, and it was there that they devoted the rest of their lives to exploring and mapping. Although they were working in several Latin American states and different parts of Brazil, most of their exploration and mapping activities took place in the Brazilian states of Mato Grosso and Paraná.³

For the purposes of explorations and mapping Seljan brothers established two companies, the Misión Científica Croata [Croatian Scientific Mission] and the Sociedad Slava Exploradora de Mato Grosso [Slavic Society for the Exploration of Mato Grosso]. In the course of three years, their activities resulted in several project proposals: the river training of the upper course of the Paraná River and its tributaries as a navigable waterway, the construc-

1 Stjepan Seljan is usually signed as Stevo. That is a common endearment variant of the name Stjepan.

2 For more information on the Seljans' cartographic work in Ethiopia, cf. Altíć (2003).

3 They also led expeditions in Argentina and Paraguay (1904-1905), Bolivia, Chile (1911), and Peru (1911-1913). On the territory of Brazil, apart from their exploration of Mato Grosso and Paraná, they led an expedition in the state of Santa Catarina (1904-1905), as well as a brief expedition to the mouth of the Amazon River (1908). Cf. Altíć (2009).

tion of a road connecting the Mato Grosso state with the Amazon River on the route from Cuiabá to Santarém, and a railroad line between the cities of Foz do Iguazu and Curitiba. The said projects involved extensive mapping activities on the Paraná, Paranapanema and Itararé Rivers, on the Salto Grande do Paranapanema, Sete Quedas (Salto del Guayra) and Cataratas do Iguazu (Cataratas del Iguazú), as well as in parts of the Mato Grosso state, along the course of the Cuiabá River, and on the headwaters of the Xingu River (twenty years later, the same route was also followed by the famous explorer Percy Harrison Fawcett). The Seljan brothers tried their hands at ethnographic cartography as well, and sought to map the indigenous people throughout the State of Paraná. These projects and associated maps showed the then Brazilian government's efforts to link the vast hinterland with the coast, and the significant contribution to those efforts by many immigrant communities, including Croatian.

SOURCES ON THE SELJAN BROTHERS' EXPLORATIONS

During their expeditions in Brazil, the Seljan brothers kept detailed field journals, in which they included not only accounts of their journeys, but also the results of their explorations.⁴ Thus, in these journals we are able to find their field sketches, tables with their measurements of temperatures, altitudes, and distances, as well as numerous descriptions of geographic and ethnographic peculiarities of individual regions. In this sense, the journals give insight into their exploration methods, the methodology of mapping as well as insight into their personal impressions from encounters with individual tribes and their customs. Also, throughout their expeditions, the Seljan brothers took numerous photographs in which they additionally documented the regions they were mapping. Except in journals and photographs, their exploration activities were also described in numerous articles from the pen of either the Seljan brothers or their contemporaries that were published in national and international publications.⁵

Based on their exploration of Brazil, the Seljan brothers wrote four books titled, *El Salto del Guayra* (Buenos Aires, 1905), *Sociedad Slava Explotadora de Mato Grosso* (Valparaiso, 1906), *El gobierno de los Estados Unidos del Brasil y la Misión Científica Croata* (Buenos Aires, 1909), and *Viagens de exploração de dois iugoslavos pelo Brasil e repúblicas limítrofes* (Ouro Preto, 1919).

In their movement around the terrain the brothers Seljan made use of a 1891 map of Brazil by João Coelho that is preserved in their legacy.⁶ The brothers relied on that map not

4 Ethnographic Museum in Zagreb, Brother Seljan Collection, call number 5050/II-B. Field journals from Brazil 1903-1905. Manuscript.

5 Articles on the Seljan brothers explorations were published in many local newspaper and journals, such as *La Prensa* (Buenos Aires, Argentina), *Hüben und Drüben* (Buenos Aires, Argentina), *Illustration Peruana* (Lima, Peru), *El Minerio* (Lima, Peru), *El Comercio* (Lima, Peru), *Westliche Post* (St. Louis, USA), *Hrvatski svijet* [Croatian World] (New York, USA), and *La República* (Guatemala).

6 Ethnographic Museum in Zagreb, Brother Seljan Collection, call number 5050/VI.B, n. 7, Mappa geral dos Estados

only to orient themselves, but also to record the route of their journey. Thanks to their careful recording of their positions on the map, today we are able to accurately reconstruct the routes of all of their Brazilian expeditions, even when no detailed journal entries exist. No less importantly, the map documented their degree of knowledge of Brazil as well as cartographic data that they might have used in their movement around the terrain. An examination of the map, especially the areas along their routes, clearly indicates that the local map provided considerably less information. Most place names and rivers that were marked in their sketches were missing from that map.

MAPPING ALONG THE PARANAPANEMA RIVER AND ITS TRIBUTARIES

The first expedition undertaken by the Seljan brothers for the Brazilian government refers to the exploration of southern Brazil in the areas of the Paranapanema River and its tributaries. To increase the navigable capabilities of waterways that would enable transport connections between densely populated coastal areas and the interior of Paraná and São Paulo states, the government commissioned the Seljan brothers to explore and map the southern tributaries of the Paranapanema River. The brothers embarked on their Brazilian expedition in São Paulo on 10 May 1903. From there they traveled by train to the town of Itapetininga, and proceeded further to the Paranapanema River and its small tributary, the Itararé. As the lower course of the Itararé River was navigable all the way to its confluence with the Paranapanema River, the Seljans wanted to explore its upper course, hoping to find the upper course of the Itararé navigable as well, which could have perhaps enabled them to sail down the Paranapanema River and, cutting across the Itararé River, reach the Iguape, a river flowing near the coastline all the way to the town of Iguape, an important export port.

The common misconception at that time, represented on many older maps, was that there was a hydrological link between the Itararé and the Iguape Rivers.⁷ Actually, the famed Brazilian hydrologist Teodoro Fernandes Sampaio⁸ had already carried out an exploration of the entire course of the Paranapanema River in 1889,⁹ but still very little was known of the tributaries of that large river. Since the Seljan brothers found out that, south of the homony-

Unidos do Brazil segundo os mais recentes trabalhos do engenheiro João Coelho e edictado pela Livraria Allema de Ernst Nolte, Buenos Aires, 1891. Lit. e imp. Jose Ruland, Cuyo 361, Bs. As. (with) Plano parcial do Rio Grande do Sul e Santa Catharina, (with) Rio de Janeiro e parte de Minas Geraes e Sao Paulo/ João Coelho.-1:500,000. Buenos Aires, Ernst Nolte, 1891. Colored lithography; 89x102 cm.

7 Eg. A província do Paraná: carta coreográfica organizada no Arquivo Militar pelo tenente-coronel Antonio P. do F. Mendes Antas a vista dos trabalhos existentes no mesmo Arquivo, e dos escritos e memórias que interessam a esta província; desenhada pelo capn. Luiz Pedro Lecor; gravada por Álvaro e Laréé. [Rio de Janeiro] Lith^a do Archiv^o. Militar Imp^a. por Martins Maia, 1867.

8 Teodoro Fernandes Sampaio (7 January 1855 – 11 October 1937) was an Afro-Brazilian polymath and public intellectual who worked as an engineer, geographer, politician, and historian. In 1879, Emperor Pedro II of Brazil named Sampaio to the national Hydraulic Commission.

9 Teodoro Fernandes Sampaio, Francisco de Paula Oliveira, J. F. Washington de Aguiar. Exploração dos rios Itapetininga e Paranapanema. Rio de Janeiro: Impr. Nacional, 1889. 1 atlas, [4], 14 p. de texto, 25 mapas; 45x59 cm.

mous town, the Itararé River was a subterranean river, and that no connecting link between the two rivers existed, the project of connecting the coast with the Paranapanema River through the Iguape and the Itararé Rivers proved to be infeasible. However, their expedition mapped the course of the Itararé River and its source in karst caves, a fact not known until that time.¹⁰ The map was drawn on a coordinate grid (based on the Paris prime meridian), and included a clearly indicated scale, which confirms that the entire representation was based on original field measurements they carried out by themselves. In addition to the hydrographic network, for the first time, the map included a large number of smaller settlements and plantations which had not been cartographically represented until that time. Interestingly, at local coffee and sugar cane plantations in the area of today's city of Botucatu, they found a significant number of European colonists, including a certain number of Croats (Bunjevci), whose locations were specifically indicated on the above mentioned map.

After exploring the Itararé River, in the summer of 1903, the Seljan brothers proceeded to the area north of the Paranapanema River. There they were tasked with exploring into whether the Rivers Do Peixe and Aguapeí (Feio) flew into the Paraná separately, or they merged into one another before that. With a view to find out more information, the Seljan brothers set to work exploring and mapping the entire area between the Paranapanema River in the south and the Aguapeí River in the north.¹¹ Finally, they found that the two rivers flew as two separate streams until their confluence with the Paraná River. Unfortunately, those rivers were not navigable, and the Seljan brothers recommended to the Brazilian government that a railway line be built for that particular region, not in the valley of those rivers, but on a mountain slope between the Aguapeí and the Tietê Rivers.¹² In addition to the Do Peixe and the Aguapeí Rivers, the Seljan brothers undertook a detailed mapping of the entire hydrographic network, and for the first time marked the courses of the Pardo, Novo and Turvo rivers, as well as their tributaries with sources on the southern slopes of upper Mirante da Serra. Like the previous map, this one also included the hydrographic network and numerous settlements, such as Campos Novos (present-day Campos Novos Paulista), that had never been marked on a map before. The aforementioned settlement was described in the journal as being the last point of civilization from which the area was dominated by local indigenous peoples. In this connection, it is worth noting that the map was drawn on a coordinate grid, but unlike the previous one, it was based on the Rio de Janeiro meridian.

10 The map is titled, *Kroki dovršenog puta i buduće plovnosti rijeke Paranapanema, misije braće Mirka i Stjepana Seljana 1903* [A sketch of a completed journey and future sailing downstream the Paranapanema River in the mission of the brothers Mirko and Stjepan Seljan in 1903], scale 1:500 000; made in Platina on 10th September 1903. Unfortunately, the original of this map is not available any more. Only a small reproduction of the map has been preserved, published in Lazarević (1991, p. 74).

11 Ethnographic Museum in Zagreb, Brother Seljan Collection, call number 5050/VI-B, n. 2. Croquis.../ Mirko Seljan – São Paulo, 2 October 1903 – manuscript, 27x30 cm. Unlike the previous one, this map was compiled in Portuguese, obviously a dedication to the Brazilian government.

12 A railway line was later built precisely on that route that also connects São Paulo with the valley of the Paraná River today.

After the exploration of the tributaries of the Paraná River, the Seljan brothers returned to the downstream course of the Paranapanema River up to the waterfalls of Salto Grande, that is, Salto dos Dourados, where they carried out a comprehensive survey of the height and flow rate. Their photographs of the waterfalls are, perhaps, the oldest preserved photographs of these waterfalls.¹³ Sailing upstream the Salto Grande do Paranapanema all the way up to the mouth of the river into the Paraná, the Seljan brothers explored and mapped the lower course of the Paranapanema. It was necessary to map in detail the course of the river, and to assess its navigability. Namely, while the upper part of the Paranapanema, south of the waterfalls, was relatively well explored, its lower course was rather unknown (consequently, on a 1891 map of Brazil, the entire course had been drawn with a dotted line). It took the Seljans 21 days to trace the 367-km-long river course in a boat all the way to its mouth.

All that time they were measuring air temperature, rainfalls, the wind, the river's depth, the speed of the river's tributaries, mapping the course of the river and the islands, and measuring the latitude. In addition to the above, they also carefully recorded in their journal the appearance of the landscape, the flora and the fauna, as well as soil characteristics and possibilities for cultivation.¹⁴ The Seljans concluded that the costs for the river training would be too high, and once again recommended the construction of a railway line between the Paraná River and the Atlantic coast. Upon that occasion, Mirko Seljan compiled a map of that part of the river, and in September 1904, personally took it to Rio de Janeiro with all the additional material they had collected. The existence of that map is known only from their journal; it remains unknown whether, perhaps, it has been preserved in an archive in Brazil.

ON THE MIGHTY PARANÁ RIVER

In 1904, the Seljan brothers were commissioned by the Brazilian government to explore the Paraná River with the aim of developing a navigable waterway. There they also took precise measurements of the river's geographic location, the width of its bed and the depth of its current.¹⁵ Although it remained unknown whether they compiled an integral map of the Paraná River, their sketches were preserved in segments in their journals.¹⁶ The sketches

13 Ethnographic Museum in Zagreb, Brother Seljan Collection, call number 5050/II-B. The four photographs of the Salto Grande waterfalls, taken by the Seljan brothers.

14 While travelling the Paranapanema River, the Seljan brothers kept a journal that was partially published in an article titled, *Od Salto Grande rijeke Paranapaneme do glavnog grada Paraguaya Asunciona* [From Salto Grande do Paranapanema to Asunción, the capital of Paraguay], which was published in the journal *Prosvjeta*, Zagreb, 1903.

15 This project continued the exploration that the Paraguayan government commissioned from the Seljan brothers to develop a navigable waterway in Paraguay.

16 Ethnographic Museum in Zagreb, Brother Seljan Collection, call number 5050/II-B. Cf. A sketch from brother Seljan journal of 16 November 1904, p. 117, with a map of the Paraná River near the confluence with the Paranapanema River. Manuscript; 15x23 cm.

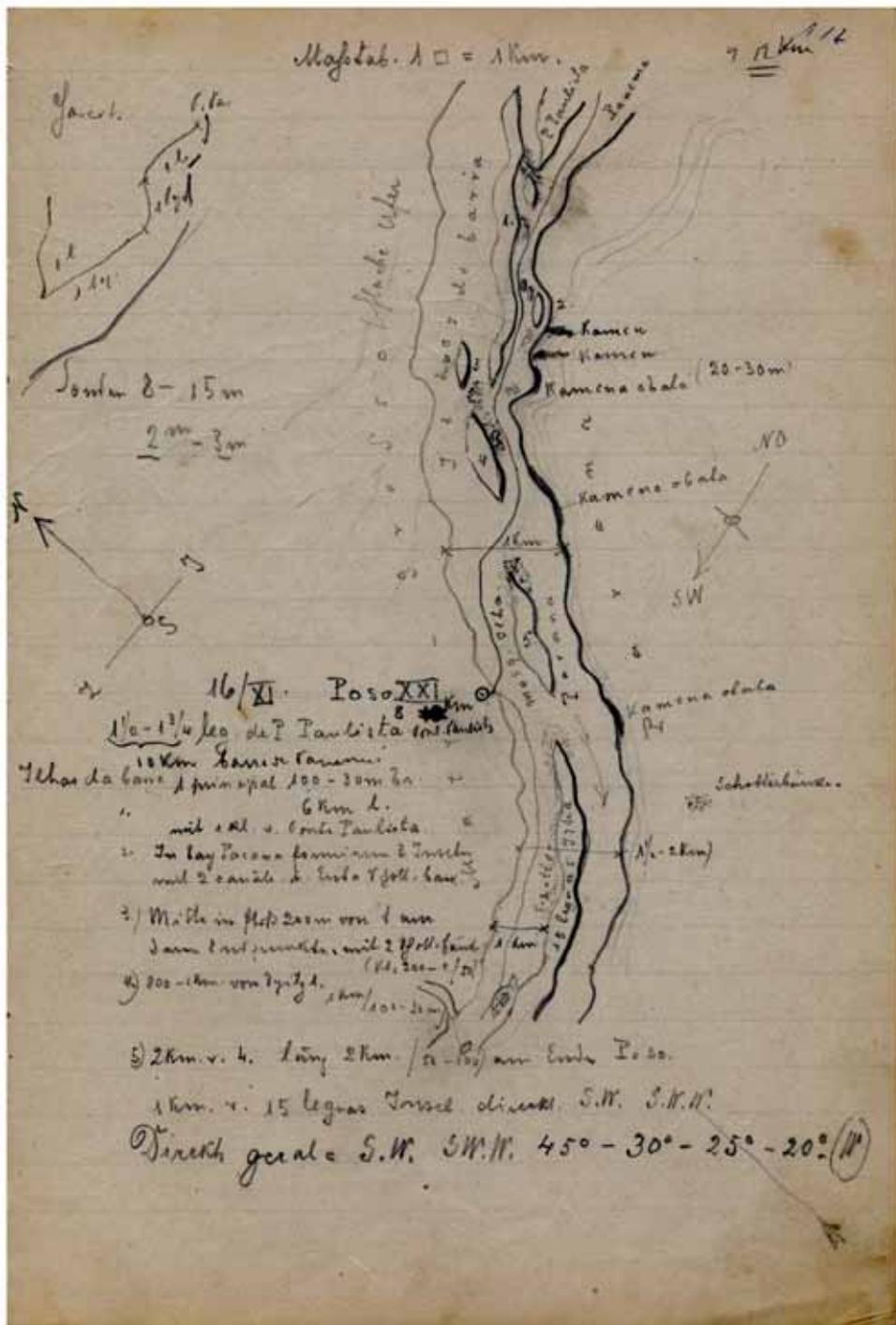


Figura 2. Sketch from Seljan brothers field journal of 16 November 1904, shows Paraná River near the confluence with the Paranapanema River. Manuscript map; 15x23 cm. Fonte: Ethnographic Museum in Zagreb, Brother Seljan Collection, call number 5050/II-B. Field journals. Brazil 1903-1905, p. 117

contained data on a detailed survey, including descriptions of coastal features (rocky/low, accessible/inaccessible for landing, etc.), and positions of river islands and shoals posing a threat to navigation.

While exploring the Paraná River, the brothers Seljan were particularly interested in its waterfalls. Sailing the Paraná River downstream, they reached the Salto das Sete Quedas do Guaíra waterfalls (Spanish: Salto del Guaíra) to which they dedicated most of their attention in surveying and mapping.¹⁷ These were the largest and most beautiful waterfalls on the Paraná River along the border between Paraguay and Brazil. Discovered in 1755, they had never been drawn in so much detail on any map before.¹⁸ The result of their work was the first detailed map of those waterfalls drawn to a scale of 1:25 000 that showed their cascades, backwaters and islands.¹⁹ The Seljan brothers recorded that the waterfalls were formed in rapids about 800 meters south of Ilha Salto do Guaíra. They measured the coordinates of the waterfalls at 24°04'20"S 11°06'04"W, using the Rio de Janeiro meridian as the baseline. They found that the Paraná River near the falls was 4 km wide, flowing along numerous river islands. They further established that, after entering into a deep and narrow gorge 80 m wide and 4.600 m long, the water was falling in seven consecutive cataracts whose height and width they also measured. They included all these data in their map, which was the first map that showed those famous waterfalls in detail. That map including data resulting from research of the rest of the expedition was published in Seljan; Seljan (1905).²⁰ Thanks to the aforementioned book and the map of Salto das Sete Quedas do Guaíra, the Seljan brothers' explorations received international scientific recognition. A publication titled *Livraria Econômica* (Rio de Janeiro) argued that, "the map will be praised for its exactness by all experts; particular recognition will be given by military engineers".

After completing the exploration of the Salto das Sete Quedas, the Seljan brothers dedicated their attention to other splendid waterfalls, the Cataratas do Iguaçu (Spanish: Cataratas del Iguazú). The base camp of the expedition was in Fort Iguaçu, a Brazilian fort 25 km away from the Cataratas do Iguaçu, situated near the Triple Frontier along the junction of

17 The falls were completely submerged under an artificial lake created by the Itaipu Dam, linchpin of the world's largest hydroelectric project to date upon its completion in 1982.

18 The Seljan brothers noted in their book that the falls were mentioned for the first time by Father Lozane in 1755. Felix Azara wrote more extensively about the falls, and also specified their geographical coordinates. The Seljans were familiar with several scientific studies of the falls, by Ambrosetti, Juan B. Segundo viaje á Misiones por el Alto Paraná á Iguazú. *Boletín del Instituto Geográfico Argentino*, XV, 1894; by Bernárdez, Manuel. *De Buenos Aires al Iguazú*. Buenos Aires, 1903; and by Nascimento, Domingos. *Pela fronteira*. Curitiba, 1903.

19 Ethnographic Museum in Zagreb, Brother Seljan Collection, call number 5050/VI-B-4. El Salto del Guayra / Mirko and Stjepan Seljan.- 1:25 000. Buenos Aires, 1905 - 35x25 cm. The map was also published in their book *Salto del Guayra*.

20 The book passed through two editions, Spanish and French; the manuscript was originally written in Croatian. For the Spanish and French editions, the manuscript was translated by Serafin Livačić and Charles de la Hitte, respectively. The publications of the books were made possible through the generous financial support from Nikola Mihanović, a wealthy Croatian-born Argentinean who at the time served as General Consul of Austria-Hungary in Argentina.



Figura 3. Map of Salto das Sete Quedas (El Salto del Guayra), Mirko and Stjepan Seljan, 1:25 000, drawn at 1904 (published 1905). Manuscript map; 35x25 cm. Fonte: Ethnographic Museum in Zagreb, Brother Seljan Collection, call number 5050/VI-B-4

Paraguay, Argentina, and Brazil. After penetrating all the way up to the waterfalls, they spent five days there, surveying the data and creating a cartographic representation of the waterfalls at a scale of 1:25 000.²¹ The Seljan brothers gave the following information regarding the measurements of the Iguazu River:

[...] about 6 km above the start of the waterfall, the river empties into a lake 980 m wide at the base. The main volume of water is collected in the right (Brazilian) part of the three channels. These channels are 2 m deep and 7-10 m wide. They are separated by granite islands devoid of vegetation. The rest of the water flows towards the left bank amongst numerous caves and more than 200 channels. The granite banks above the waterfalls are 70-80 m high, and they spread into a horseshoe shape that is 3,900 m long. Here the bank slopes deeply, creating three magnificent waterfalls: the Salto Floriano Peixoto is 20 m wide and 63 m high, the Salto Union in the middle is 22 m wide and 67 m high, and the Salto Benjamin Constant is 16 m wide and 63 m high. The gorge amongst the three main falls is called the Gargante del Diablo. There are also numerous waterfalls on the Argentinean side, and the greatest of them is the Salto Victoria.

²¹ Ethnographic Museum in Zagreb, Brother Seljan Collection, call number 5050/VI-B-6. A sketch of Salto de Iguazu / Mirko and Stjepan Seljan.- 1:25 000.- manuscript; 10.5x10.5 cm.

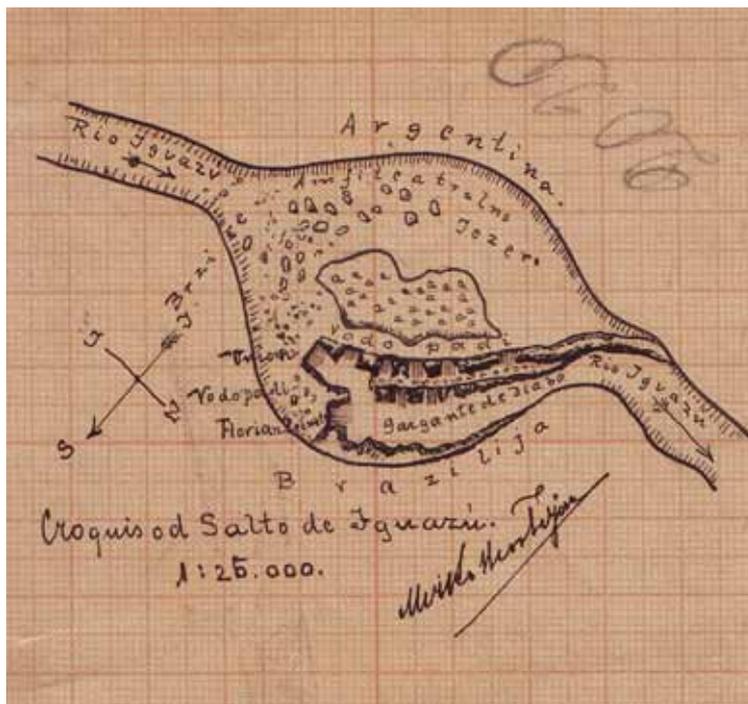


Figura 4. Cataratas do Iguazu, Mirko and Stjepan Seljan, 1:25 000, 1904. Manuscript map; 10.5x10.5 cm. Fonte: Ethnographic Museum in Zagreb, Brother Seljan Collection, call number 5050/VI-B-6

The results of the measurements undertaken by the Seljan brothers in 1904 do not vary significantly from today's measurements,²² and their map of the falls at a scale of 1:25 000 was the first detailed map of these falls.²³ In addition to mapping the falls, they also took numerous photographs that are valuable historical documents about the natural state of these falls and their surrounding area before being exploited by tourism.

After mapping the Cataratas do Iguazu, the Seljan brothers proceeded eastwards, exploring possibilities for a link between Fort Iguazu and the town of Curitiba, which was already connected with the Atlantic coastline by a railway line. From Fort Iguazu they went eastwards across the mountains of Serra do Boi Preto, Serra das Araras, and Serra da Esperança, concluding that the latter was the best route for a transport link between Iguazu and Curitiba. Having returned to Rio de Janeiro, they explained their view to the Brazilian government. On that occasion, they reported on the explorations they accomplished and the maps they compiled, proposing the construction of a railway line and roads to connect the south-eastern coast of Brazil with the Paraná River.²⁴ The railway line was not built, but today,

²² Here it is necessary to take into consideration the fact that the Seljan brothers were at the waterfalls in March when the water level was especially low.

²³ The first European to find the waterfalls was Spanish Conquistador Álvaro Núñez Cabeza de Vaca in 1541, after whom one of the waterfalls on the Argentine side was named. The waterfalls were rediscovered by Boselli at the end of the 19th century, and one of the Argentine falls was named after him.

²⁴ In Croatia, the map of that part of their journey has not been found, although it was mentioned in their journals. It is presumed that all material collected on ground was handed over to Brazilian government.

there is a road from Guarapuava all the way up to Fort Iguaçu that follows precisely the route explored by the Seljan brothers, and proposed by them for the construction of a railway line.

ETHNOGRAPHICAL MAPPING OF INDIGENOUS PEOPLES

The exploration and mapping of Brazil by the Seljan brothers did not focus only on geographical issues. Throughout their expeditions, the Seljans took a keen interest in indigenous peoples and their communities. In addition to systematically collecting useful items from individual indigenous communities,²⁵ as well as recording their languages and traditions, the Seljan brothers tried to determine for individual indigenous groups with whom they came into contact the spatial coverage of geographical areas in which such individual groups lived. Thus, over time they managed to compile a manuscript ethnographic map with a representation of geographic locations of various groups they encountered during their expeditions.²⁶

They identified the Guaraní people as inhabiting the areas of the Itararé River and the lower course of the Paranapanema River, noting down in their journal that their community consisted of about 50 families with some 200 souls. At later times, they often came into contact with Guaranís, particularly in the area of Paraguay. Along the Paraná River, within the territory of Paraguay and in southern parts of Mato Grosso, they located the Xavante people. In the jungles north of the Paranapanema River they identified the Coroados whom they later also encountered along other tributaries of the Paraná River, such as the Ivaí and the Piquiri. Sailing downstream the Paranapanema River from the Salto Grande, they located the Cayuá people whom they also encountered in the lower stream of the Iguaçu River. Also, they marked the Guayaki community in the jungles of eastern Paraguay, noting that their culture was very much related to that of the Guaraní community.

Comparing this map with the results of subsequent explorations of anthropologists, such as Alfred Métraux, one can say that the Seljans located particular indigenous communities relatively accurately, but failed to determine their names precisely (this primarily refers to defining the relationship between the main Guaraní group and their associated subgroups). Although they were able to accurately notice the kinships between certain groups based on physiognomy, language and customs, their anthropological knowledge was rather limited.

THROUGH THE JUNGLE OF MATO GROSSO

In early 1905, the brothers were in Chile, first in Santiago, then in Valparaíso. There they met Francisco Pammer a medical doctor of Croatian origin who joined them on their next

²⁵ Today, these items are kept in the Ethnographic Museum in Zagreb.

²⁶ Ethnographic Museum in Zagreb, Brother Seljan Collection, call number, 5050/III-B, correspondence 1903-1910, letter of Mirko Seljan from 6th January 1905 with map.

expedition, the exploration of Mato Grosso.²⁷ Yet another idea for a better transport link for the then rather isolated Brazilian state was born. At that time, Mato Grosso had no direct transport link to the Atlantic Ocean, and it was necessary to travel downstream the rivers Paraguay and Paraná up to Buenos Aires and Montevideo, and then via steamboat to Rio de Janeiro. Arriving in Cuiabá, the capital of the state of Mato Grosso, in the spring of 1905, the Seljans' idea for a better transport link met with great approval from the local government. Just some time before the Czech explorer Jan Kobbe arrived in Cuiabá from the Amazon region, claiming that it was possible to pioneer a way from Cuiabá northwards all the way up to the Amazonia.²⁸ However, the northern part of Mato Grosso state was covered with vast jungles, and was still unexplored and unmapped. Here the Seljan brothers and Dr. Pammer saw their chance. For the purpose of exploration, the Seljan brothers founded the company of Misión Científica Croata, and then its sister company of Sociedad Slava Explotadora de Mato Grosso. According to the surviving document, in the summer of 1905, the Misión Científica Croata entered into an agreement with representatives from the state of Mato Grosso who commissioned them to explore and pioneer a route for a future transport link between the city of Cuiabá in the state of Mato Grosso and the town of Santarem in Amazonia. After accomplishing their job, the Seljan brothers were obliged to provide the Mato Grosso government with detailed maps showing drawn routes, as well as with all other exploration results. Under the agreement, the government was obliged to provide the expedition party with all necessary measuring instruments, medical equipment, and armed escorts. In regard of their mapping needs of the expedition, the Seljan brothers purchased a theodolite, sextant, compass, aneroid barometer, thermometer, goniometer, binoculars, and a photographic camera, which confirms the seriousness of cartographic work they undertook. As a fee for the accomplished job, the government was to acknowledge 80,000 hectares of the land to the Misión Científica Croata Company, as well as grant a concession for the construction of the above stated road. In this way, the idea of the expedition to Mato Grosso received its legal form.

For the preparation for the expedition, during 1905, the Seljan brothers created preliminary maps of an extensive area around the city of Cuiabá, and further northwards and westwards all the way to the borders with Bolivia. From that period, several field sketches of that area have been preserved, and it is obvious that, throughout their journey, they undertook precise measurements of geographic latitudes and longitudes, altitude, air temperature and distances passed, passing 320 kilometers in total. They included the results of those field explorations in their map of the northern part of Mato Grosso state, and published the map in their geographical study of Mato Grosso. It was also part of the preparation for their another great expedition, exploring transportation routes along the Amazon River.²⁹

²⁷ Ethnographic Museum in Zagreb, Brother Seljan Collection, call number 5050/II-B.

²⁸ Argentinean daily newspaper *La Prensa*, 5 March 1906.

²⁹ Except for a geographical study, the booklet titled, *Sociedad Slava Explotadora de Mato Grosso* (Valparaíso, 1906), contained a copy of the agreement which the Misión Científica Croata Company entered into with the

Three maps were added to the study. The first is a general map of the state of Mato Grosso (scale of 1:11 575 500), which was not their creation, and where the future route was drawn in. The second map shows the route of a road that was to link Cuiabá and the port of Santarem (scale of 1:18 000 000). The third map shows the northern part of the state of Mato Grosso, and is the result of original explorations of the Seljan brothers of the terrain.³⁰ Namely, results obtained in their previous explorations, known from the aforementioned field sketches, were included in that map. The level of the Seljan brothers' contribution in mapping the state of Mato Grosso is in fact best seen on this map. On areas north and south of the city of Cuiabá which they mapped, can be seen for the first time the dense network of water flow and settlements in strong contrast to the rest of the map that contains only basic

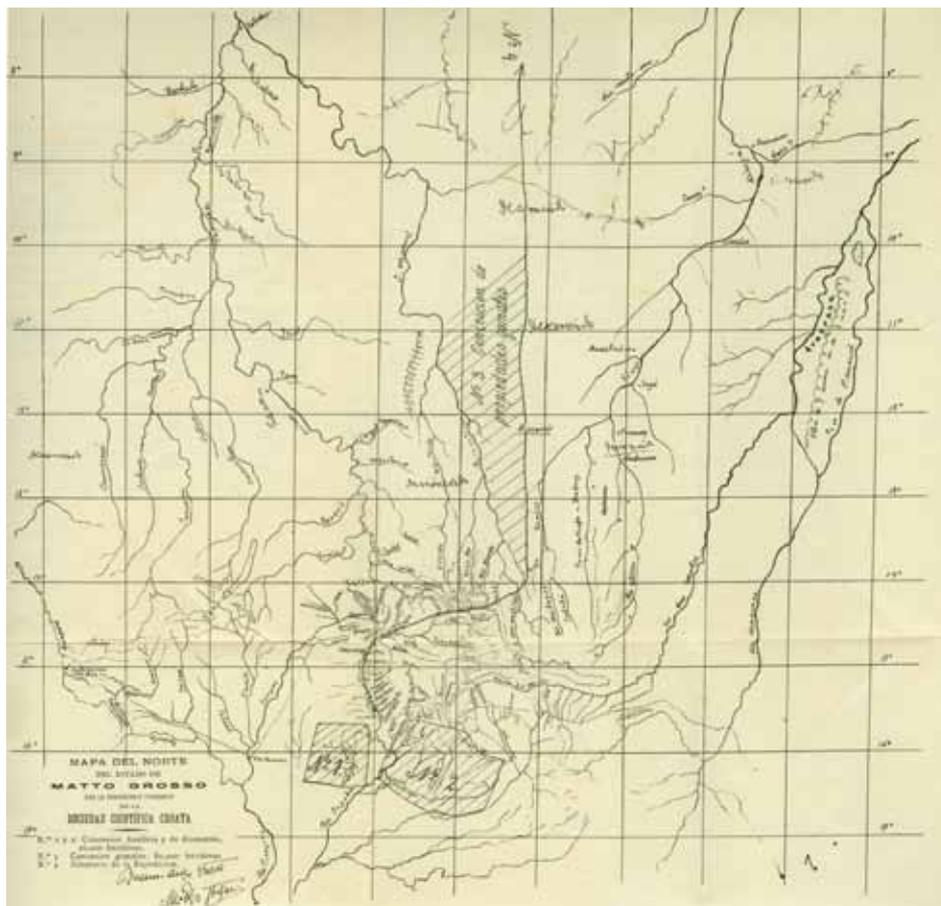


Figura 5. Mirko Seljan's map of northern part of Mato Grosso, 1906. Printed map; 30x30 cm. Copy from Sociedad Slava Explotadora de Mato Grosso (Private Collection of Mirela S. Altic)

State of Mato Grosso as well as a list of all shareholders. Also, the aforementioned booklet shows that Misión Científica Croata was a sister company of the Sociedad Slava Explotadora de Mato Grosso company.

³⁰ Mapa del norte del estado de Mato Grosso con la concesion e itinerario de la Sociedad Cientifica Croata/Mirko Seljan. Buenos Aires, 1906 - manuscript; 30x30 cm.

geographic elements. For the first time, the aforementioned map showed all tributaries of rivers Cuiabá and Rio das Mortes, all sources of rivers Xingu and Tapajós, and large tributaries of the Amazon. In this way, the brothers promoted the less known and less explored northern parts of the state of Mato Grosso. In addition to own field work, the Seljan brothers used an 1881 map of Mato Grosso state as a cartographic base for their representations. Showing the area of their explorations at a scale of 1:700 000, the map was one of the best maps of Mato Grosso at that time. Once again, it confirmed the range of their knowledge and scientific equipment in each of their expeditions.³¹

At the beginning of 1906, the expedition was ready to depart.³² However, when they arrived to Cuiabá there was a surprise for them. Nothing that was agreed in the contract with the state government was there. They bought the necessary instruments and departed but very soon a revolution halted their plan as the president of Mato Grosso state was deposed and executed. Armed conflicts began in which all the property for their expedition was stolen, and, together with Dr. Pammer, the brothers organized a hospital and looked after the injured. After the establishment of a new government, the Seljan brothers intended to renew the agreement, and to return the capital they invested into their expedition, but without any results. Their court process was conducted in Santiago and lasted until 1909 when they received only a symbolic compensation.³³ Later on, when connecting Mato Grosso with Amazonia, the authorities built a road that traced the same route from Cuiabá towards Santarem that the Seljan brothers had planned in their project. This road today still represents the main longitudinal traffic route between Mato Grosso and Amazonian ports.

EPILOGUE

The Mato Grosso expedition was the last large expedition carried out jointly by Mirko and Stjepan Seljan. In 1911, the brothers embarked on a new project in Peru, which was to separate them forever. In that year, the Seljan brothers concluded an agreement with the Peruvian government on the design and construction of a road that was to connect the Peruvian Pacific coast with the rivers of Amazonia to the east of the country.³⁴ To be able to financially support their demanding project, Stjepan Seljan travelled to the United States where he was able to convince several American magnates to financially support the project

31 Carta da província de Mato Grosso organizada em 1880 com documentos coligidos por ordem de s. ex^a o snr. Cons. João Lin Vieira Cansansão de Sinimbu, ministro da Agricultura em 1897, e publicada por ordem de s. ex^a o snr. Cons. Alfredo Rodrigues Fernandes Chaves, ministro e secretário de estado dos Negócios da Guerra em 1886 por Francisco Antônio Pimenta Bueno, tenente-coronel de estado-maior de 1^a classe. 1887. – 1:700 000. Rio de Janeiro, Archivo Militar, 1887. 1 mapa *blue-print*; 67x57 cm.

32 The Seljan brothers gave a series of lectures in Buenos Aires. The news about their lectures appeared in *La Prensa* daily newspaper on 11 February 1906.

33 On this occasion Mirko Seljan published the book titled, *El Gobierno de los Estados Unidos de Brasil y la Misión Científica Croata*, Buenos Aires, 1909, where he explained the collapse of the expedition and the court process.

34 For more information on this project cf. Altić (2009).

and to establish The American Peruvian Corporation – Sociedad Peruana-Americana. At the same time, Mirko Seljan started the expedition in the Peruvian Andes. After reaching the valley of the Huallaga River, Mirko went missing in May 1913 along with the rest of his expedition party.³⁵

Mirko's mysterious death and the collapse of the whole expedition (there were no survivors) halted the work of the most famous Croatian cartographic duo.³⁶ Stjepan Seljan, heartbroken by his brother's death, never took on any further cartographic work. The rest of his life was spent quietly in Brazilian state of Minas Gerais. He settled in Rodrigo Silva near the town of Ouro Preto and married Maria Aracy, a Brazilian teacher. They had four children: Mirko, Janko, Moema, and Zora Seljan who became a prominent Brazilian writer. Stjepan Seljan died of cancer in Ouro Preto in 1936. In his sole discretion, he has no grave. His mortal remains were probably laid into an unmarked crypt under the floor of one of the churches in the town of Ouro Preto. His heirs still live in Brazil.

Bibliographical references

ALTIĆ, Mirela Slukan. *Mirko Seljan (1871-1913) – Croatian explorer and cartographer of Africa*. Proceedings of the Symposium on History of Cartography of Africa, Cape Town, 4-5 August 2003 (edited by Elri Liebenberg), 2003, p. 19-28.

_____. *Misión Científica Croata and its Role in the Mapping of Latin America*. Conference Proceedings of 24th International Cartographic Conference, Santiago de Chile, 2009. (digital edition). Available at: <http://icaci.org/files/documents/ICC_proceedings/ICC2015/papers/19/55.html>.

LAZAREVIĆ, Aleksandra Sanja. *Braća Seljan na crnom i zelenom kontinentu* [Seljan brothers on black and green continents]. Zagreb: Grafički zavod Hrvatske, 1991.

SELJAN, Stevo. *Viagens de exploração de dois iuguslavos pelo Brasil e repúblicas limítrofes*. Ouro Preto: Oficinas da Casa Matos, 1919.

SELJAN Mirko. *El gobierno de los Estados Unidos del Brasil y la Misión Científica Croata*. Buenos Aires: Tallered de la Casa Jacobo Peuser, 1909.

SELJAN, Stevo; SELJAN, Mirko. *El Salto del Guayra*. Buenos Aires: Impr. Gmo. Kraft, 1905.

SELJAN, Stevo; SELJAN, Mirko; PAMMER, Francisco. *Sociedad Slava Explotadora de Mato Grosso*. Valparaiso: Sociedad Imprenta y Litografía Universo, 1906.

35 Parts of Mirko's body were found near Cajamarquilla (present-day Bolivar) in late 1914. It is believed they were killed by local indigenous people.

36 Stjepan Seljan described the tragic circumstances surrounding Mirko's death and his attempts to find Mirko's body in Seljan (1919).

Sources

Ethnographic Museum in Zagreb, Brother Seljan Collection, call number 5050/II-B. Field journals. Brazil 1903-1905. Manuscript.

Ethnographic Museum in Zagreb, Brother Seljan Collection, call number 5050/II-B. Photographs. Brazil 1903-1905.

Ethnographic Museum in Zagreb, Brother Seljan Collection, call number, 5050/III-B. Correspondence 1903-1910, letter of Mirko Seljan from 6th January 1905 with map.

Ethnographic Museum in Zagreb, Brother Seljan Collection, call number 5050/VI-B. Maps n. 2, 3, 4, 6, 7.

Recebido em 11/2/2016

Aprovado em 19/2/2016