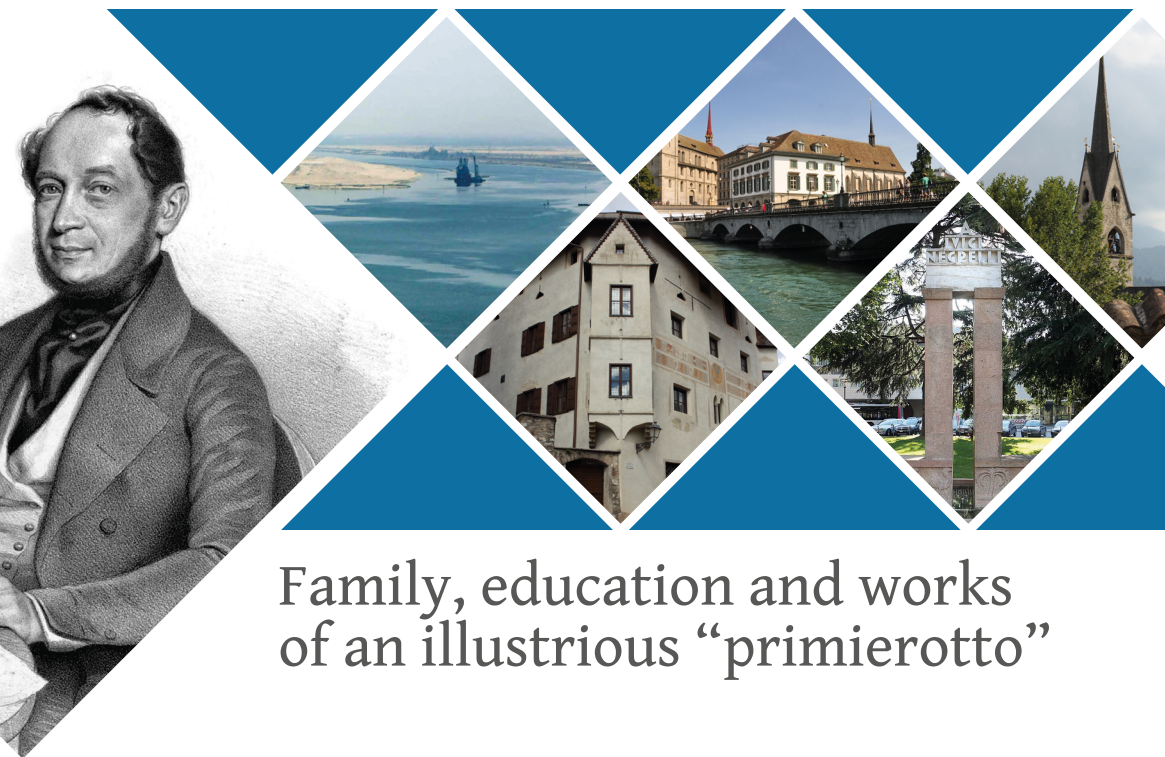


LUIGI NEGRELLI

THE STORY OF THE ENGINEER

WHO DESIGNED THE SUEZ CANAL PROJECT



Family, education and works
of an illustrious “primierotto”

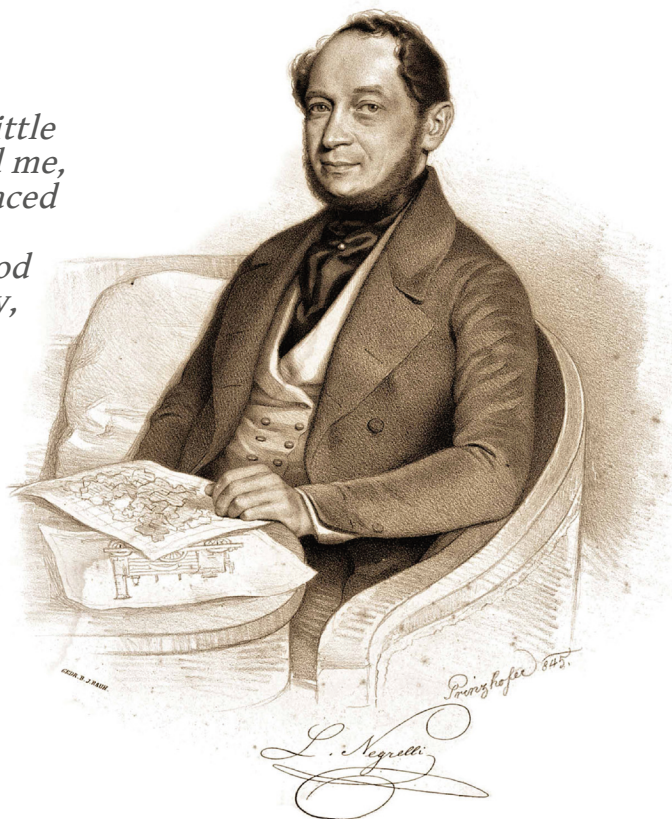


COMUNE DI PRIMIERO
SAN MARTINO DI CASTROZZA



“Words are sacred to my eyes... little by little the thought comforted me, that nature has not placed any barrier for the thinking man to do good and that every Country, where he can operate good, is for him Homeland and no shading of political opinions can prevent him from pursuing his objective.”

Luigi Negrelli
“Appenzellisches Monatsblatt”, nr.2/1837



Trentino is a borderland, a place that throughout time has given birth to amazing people that have been able to seize the opportunity of living between two worlds. One of the said people is certainly Luigi Negrelli, an exceptional mind that designed one of the biggest man made endeavors during the XIX century. Born in Fiera di Primiero, Negrelli became a protagonist of European and world history. Remembering him one hundred and fifty years from the opening

This publication, promoted by the municipality of Primiero San Martino di Castrozza, is dedicated to whoever desires to know about the life and works of Luigi Negrelli through a pleasant, educational approach. It is intended to be an instrument of easy reading, particularly for school students of all grades with the aim, in the 150° anniversary year of the inauguration

of the Canal, designed by him and two hundred and twenty years since his birth, through this precious publication, a means of honoring the memory of an extraordinary person that represents an example to so many youngsters who can draw inspiration from him and understand that even from a small place great deeds can be born. Enjoy reading!

The President of the regional council
Roberto Paccher

of the Suez Canal, to remember and teach even the new generations the amazing story of our distinguished fellow citizen.

The Municipality councilor for culture of
Primiero San Martino di Castrozza
Francesca Franceschi

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HIS LIFE



Beyond the critics' conflicting opinions regarding his precise day of birth, the very first hours of Luigi Negrelli's life happen in the places depicted above: next to his birthplace, we see the site of baptism, which is the Church of Santa Maria Assunta.

Here begins the life of Luigi Negrelli, born in 1799 in **Fiera di Primiero**, a land for some centuries already under the **Habsburg rule**. Son of Angelo Michele, **he finds in his family an environment propitious** to his human and intellectual dimension: after an initial home education, he stud-

ies in Valstagna and Feltre, then, he goes to Innsbruck to complete his studies and take his first steps in the working world. Various experiences lead him to **move all around Europe**, coming in to contact with prestigious men in the industry. Animated by great commitment and a **tireless pas-**

sion for his job, he will also find time for his private life, marrying twice and giving life to a large family. Despite some short-lived disappointments, his life is **rich in satisfaction**, both from a personal point of view and a work one.

AN EMINENT PRIMIEROTTO

Luigi Negrelli represents a multifaceted figure in the fields of **engineering and transport**. His activity ranges from planning Switzerland's **network of railway communications and waterways**, to the **railway lines of Austria-Hungary**, reaching the real apex in his studies with the design of the Suez Canal, built after his death by

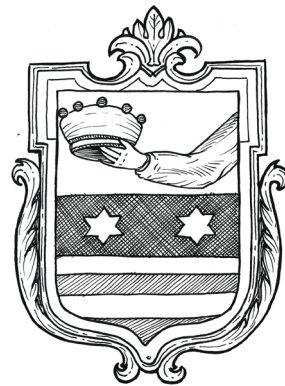
Ferdinand de Lesseps. He will be awarded the title of Knight of the Empire by the emperor himself, changing his name to **Luigi Negrelli of Moldelba** ("von Moldelbe"), in virtue of the project of a canal between Moldavia and the Elba and for the bridge built at the confluence of the two rivers.



THE FATHER'S ROLE, ANGELO MICHELE NEGRELLI

Luigi Negrelli is born January 23 1799 in Fiera di Primiero his father **Angelo Michele Negrelli and his mother Elisabetta Württemberg**, the first

male of 11 children. His mother belongs to a family originally from Rattenberg (German Tirol), that had settled in Primiero in the second half of the 1700's, his father is a **wealthy merchant and landowner**, as well as holder of some **public offices**. As Angelo himself tells us in his autobiography of almost a thousand pages, "*Memorie*", a branch of the Negrelli family of Genoese origins, had established from Valstagna to Primiero after 1761. The autobiography, besides letting us comprehend the



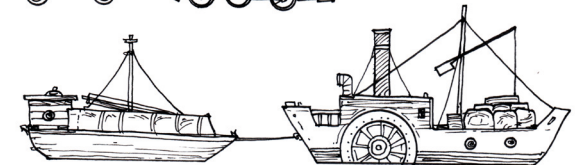
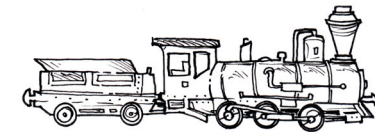
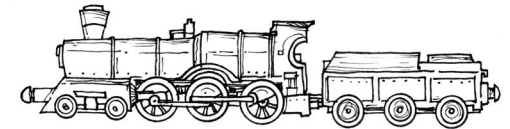
thick web of social and commercial relations of the Negrellis', represents an interesting insight into life in Primiero between the XVIII and XIX centuries. (For more details see chapter "The Negrelli family" at page 54).



A MULTI TALENTED MAN

His personality is characterised by some particular elements that have proved to be strategic strengths in his rapid ascent:

- **Synergy between humanistic and scientific culture**, helped by his father and matured thanks to the philosophical studies at his boarding school in Feltre;
- The fact of having been born in a **frontier land**;
- **Early bilingualism** that will be perfected with experiences abroad;
- The **thirst for knowledge** and to continually put oneself to the test in **different contexts**: in his long career, Negrelli strongly committed himself to his job, demonstrating tenacity and a desire to emerge;
- **Willingness to move** from one country to another.



THE COMPLEXITY OF THE INTERNATIONAL HISTORICAL-POLITICAL CONTEXT

Luigi is born in Primiero, a land that for centuries has been under Habsburg rule, in a **Trentino** that is a **frontier land**, with a **mediating function between the Germanic world and the "Italian" one**. These are the years of the **Napoleonic invasions**, the **Restoration** and the subsequent **revolutionary movements**, characterized by a very complex international context, in which Luigi Negrelli and his family members never lost sight of

their faith towards the Habsburg monarchy. Due to a series of historical and social circumstances he finds himself becoming one of the protagonists of some major changes taking place. Let us consider, for example, renewed mobility needs for a means of transportation along the Alpine arc or the need to restore transportation after numerous social upheavals of the time.

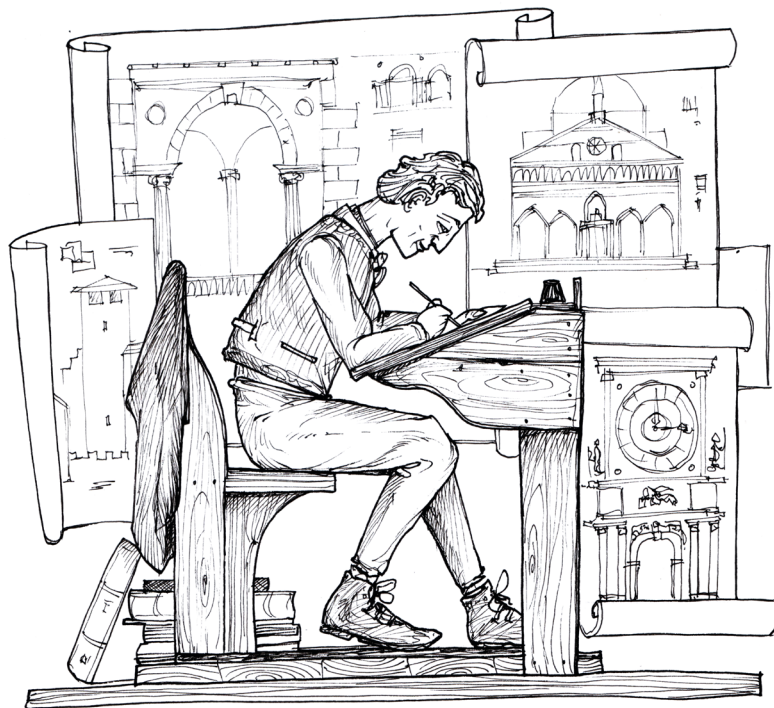
EDUCATION

His father played a key role in Luigi's education, supporting the enhancement of his marked intellectual talents he had shown since his childhood. He received his first education privately, then he attended the **Viscovile school of Feltre** (which became part of the Lombardo-Veneto Kingdom, once the Republic of Venice had fallen and with the end of the Napoleonic war).

School awards immediately boost his **design and drawing skills**. The latter will be worth the emperor Francesco d'Austria's sup-

port, who will grant him a scholarship to finish his studies in Feltre and make **study trips to Padua and Vicenza** (he will be the only bourgeois among the many nobles to be admitted). He then continued his **studies in Innsbruck** as he intended to pursue a career in the public sector. As explained by Andrea Leonardi, a professor at the University of Trento and one of its top experts: "*Those who wanted to approach the engineering practice (...) followed a training procedure that included the study of mathematics and physics in one of the*

universities of the Monarchy - in the case of Negrelli the one in Innsbruck- and then practicing a sort of apprenticeship under the guidance of an expert engineer, who should have accompanied the aspiring engineer in a series of field design work". All of this would then be followed by an examination to verify the acquired skills, after which the profession could be fully practiced.



THE HUMANE STORY OF A MAN OF STRONG CHARACTER

LOVE FOR NANNI

Introducing him in to this new environment is the **countess Maria Anna Welsperg** widow Sarnthein, born in Primiero and an acquaintance of his father Angelo Michele.

Luigi falls in love -which is reciprocated- with her younger daughter Maria Anna, known as **Nanni**, but the relationship will not continue as Luigi has no noble title, and also

because of the conspicuous financial resources that the Welsperg family needs after having been hit by the Frank-Bavarian invasion.

AN UNHAPPY MARRIAGE

Two years after Nanni's death due to illness, Luigi marries **Amalia von Pirkenau**, noble and wealthy (1829), the daughter of a state administrator who went into an entrepreneurial career with uncertain outcomes. The relationship reveals several differences both in character and in intent: she feels alone and neglected by a man dedicated exclusively to work, he reproaches her for being weak and neglecting her family life. From their bond three children are born: Luigi, Oscar and finally Emilia, who unfortunately will die prematurely (1831). Added to this is the death of Amalia herself.



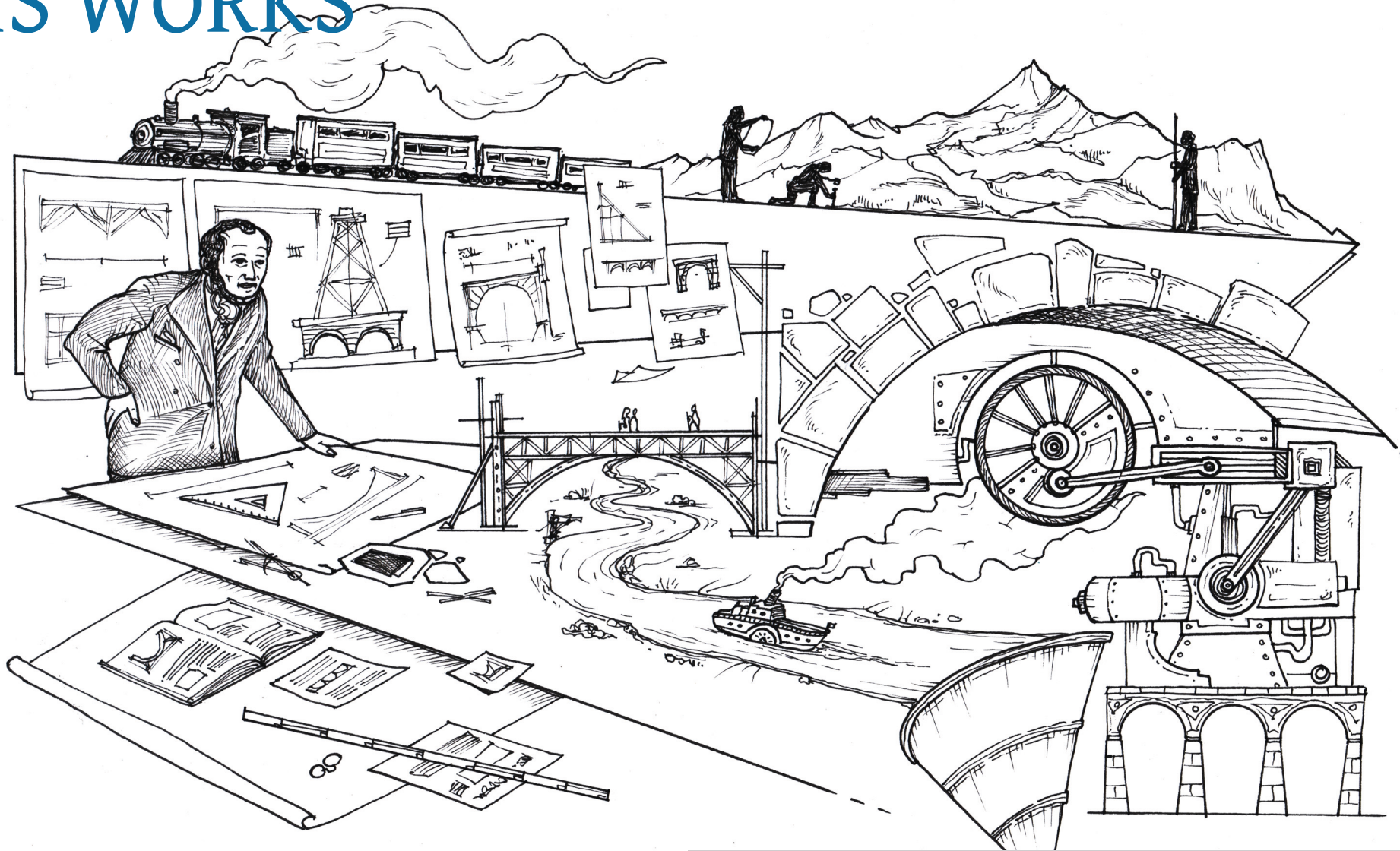
REDISCOVERING LOVE WITH LOTTI

In 1847 he married the 24-year-old **Carolina Weiss Starkenfels** - known as Lotti - a perfect wife, according to what emerges in the pages of his diary. **Five other children are born**: Ferdinando, Giuseppe, Maria, Elisabetta and Massimiliano. Giuseppe and Maria

will have as their godfather and godmother the **famous field marshal Radetzky and his wife**, with whom Negrelli had entered into close relationship via his job in the Lombardo-Veneto region, so much so, as to become a sort of "executive arm". She will be next to him for

the rest of his life, even when, after having worked on the Suez Canal project, his state of health will deteriorate and lead to his death (1858). He will be buried in the monumental cemetery of Vienna, next to other illustrious people of the time.

HIS WORKS



Luigi Negrelli is known to the general public above all for the conception of the famous **Suez Canal**. In reality, his figure does not end with this although grandiose work, as he is able to successfully engage in numerous other achievements in the field of transport engineering, such as for

example **roads, bridges, viaducts, railway sections and canals**.

His activity in the **Tyrol-Vorarlberg**, the experience in the railway sector in **Switzerland**, study trips to France, Great Britain and Belgium commissioned by the chamber of commerce in Zurich itself,

as well as the role assumed in the reconstruction of the **Lombardo-Veneto** region after revolutionary uprisings, are just some of the most significant stages of a fast professional ascent.

To guide him in this feverish activity, is his belief in the **key role of transportation**

in economic and social progress, in an already European and global vision.

THE BEGINNING OF HIS CAREER IN TIROLO AND VORARLBERG

His long career is made up of moving and of different commissions in every sector of transport and construction. His career path leads him to gain experience outside of home, beginning in **Innsbruck**, where he arrived in 1818 to perfect his studies, starting immediately in the field as an **unpaid practitioner in the Royal and Imperial district commission of Tyrol**, which at the time also included what is currently known as Vorarlberg. After passing some important exams, at the age of 21 he becomes a **full member of the Construction Management** and here he establishes an excellent

personal relationship with Josph Duile, engineer designer of, for example, the Brenner road. With him Negrelli deals with the **regulation of the course of the Rhine** within a wider project of **restoration of the transport routes and regulation of water courses**, and thus begins to gain important experience for future tasks. His interventions are for example the **Val Venosta and Val Pusteria roads**, the arrangement of the Adige and Inn riverbeds, as well as the construction of numerous road arteries in the Vorarlberg. In particular, the work in this region and the **arrangement of the banks of the Rhine**

with Duile in 1826 brings him closer to the Swiss community, for which he is mediator on behalf of the Austrian government, and this will be fundamental for his subsequent transfer. In Vorarlberg he was named "deputy" of the public works department in the **district of Bregenz**, opening up for him a vast choice of works to be carried out, from appraisals to completion of already existing works, from remediation to road design. Little known is Negrelli as the **builder of 3 churches in Vorarlberg**, located in Lustenau, Sulzberg and Sattens, two of which are still known today for their traditional style.



Parish church "S. Lorenzo" in Sulzberg – Photo by Boeringer Friedrich



Photo: Roland zh / Wikimedia Commons

HIS ACTIVITY IN SWITZERLAND, SAINT GALLEN AND ZURICH

As already cited, Negrelli approaches Switzerland with his activity on the river Rhine and, thanks to his expertise, **is called, starting from the year 1830, by the authorities of the Canton of St. Gallen** to supervise the construction of the new road network. Only two years later, in 1832, he was offered the post of **inspector of the St. Gallen road and hydraulic constructions**, but in order to transfer he had to obtain **special authorization from the**

central Habsburg state, which was initially against him working for the adversary state. Negrelli, however, succeeds in **obtaining permission from the emperor**: in exchange though he must renounce his Austrian citizenship, without, jeopardizing the possibility of regaining it in case he returns. In the Swiss canton he was entrusted with the **construction of numerous mountain roads, the regulation of often raging streams and the planning of river traffic**, giving

great stimulus to steam navigation. Despite these merely technical commitments, Negrelli finds the opportunity to intervene in urban planning and architecture in the main centers, so much so that he is considered an authority at the cantonal level. Negrelli is also responsible for the design of the important artery of the Ruppen Pass, on the border with the Appenzel Ausser Rhoden, known for the difficulty of the mountainous route. Meanwhile, the engineer from Primiero is also ap-

proached by the authorities of the **neighbouring canton of Zurich**, regarding the arrangement of the port and the construction of the **bridge over the Limmat**, the river passing through the capital. This bridge, which has become a symbol of Negrelli's popularity (see chapter

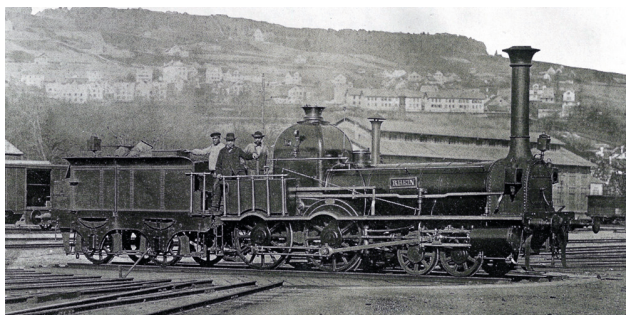
the awards for the Munsterbrücke in Zurich on page 37), is built in one of the crucial points of the city and is designed with great foresight, foreseeing the increase in load due to city development. The inauguration took place with a huge party in 1838. In those years, however, he

worked hard to modernize the road network of the entire region and drawing up of various regulatory town development plans.

THE RAILWAY: THE STORY OF THE ZURICH-BASEL

His work in the railway sector is one of the peaks of Negrelli's activity: he has a **deep trust in the potential of the new form of transportation**, destined to become one of the most important means of transport of the time and to favor the entire European economy.

The studies of **Marco Seguin** on the development of the rails and the exchanges of views with **George Stephenson**, considered one



One of the locomotives from 1867

of the fathers of the steam locomotive, are very useful to him in the strategic task of connecting the individual cantons of Switzerland and placing it at the center of a wider exchange network on the continent. **The first Swiss railway to be built is the Zurich-Basel**, later called *Schweizerische Nordbahn*, in order to connect the two most industrialized cities of the Confederation. However, although flat, the route was not the simplest, due to the crossing of four rivers, to be executed with daring bridges. To this end,

the Swiss engineer Johannes Eschmann decided to ask for the collaboration of Negrelli himself, who presented the preliminary project in 1837. A joint-stock company was founded to finance the construction, but economic difficulties and internal conflicts between cantons and shareholders slowed down the construction, so that the first section opened only in 1847.

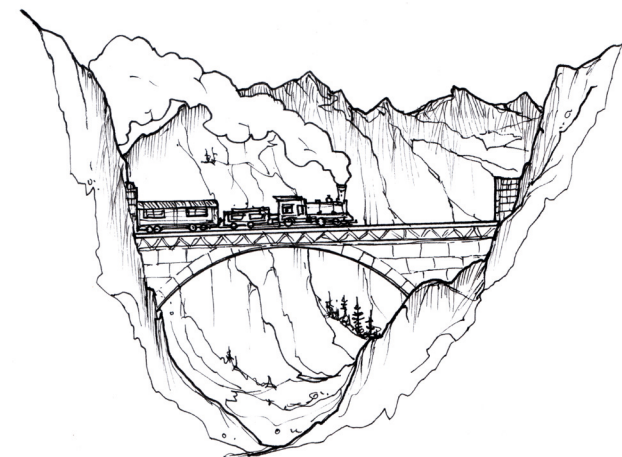


Poster and timetable from 1847

THE CHALLENGE: THE RAILWAY AS A MEANS OF TRANSPORT IN MOUNTAIN AREAS

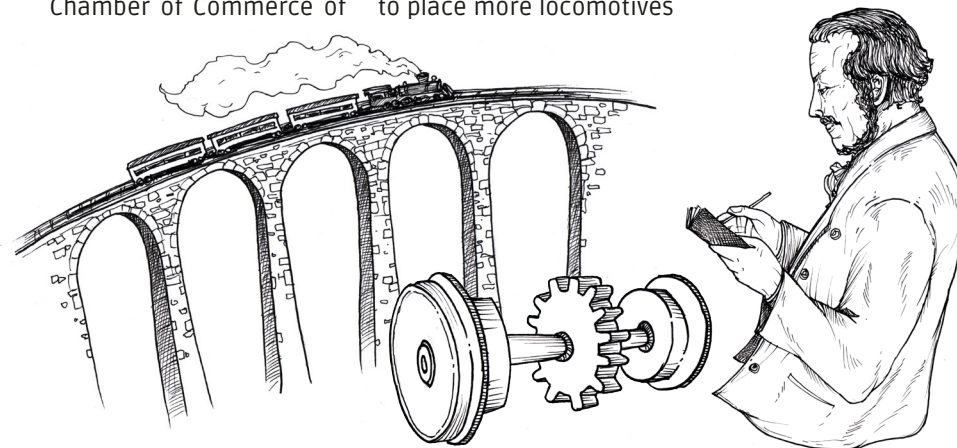
In this period Negrelli is convinced that the railway is the **ideal vehicle for rapid movement even in a mountainous environment**.

In fact, he already imagines the extension of the railway line first from Basel to Lake Constance and then Chur, with the prospect of reaching Italy. However, these sections present many technical difficulties due to the crossing of deep valleys, streams and large differences in height. **His studies thus concentrate in this environment to find a technically efficient solution**. In order to explore the potential of the new means of transport, Luigi Negrelli made a **study trip to France, England and Belgium**, financed by the Chamber of Commerce of



Zurich. From this experience a dedicated specialist publication, in which he enthusiastically embraces the innovative idea of the "mechanical traction" railway, therefore with the rack system, as well as a diary (see chapter autobiography on page 36) are born. One of his intuitions will be to place more locomotives

per convoy and to build a system of rail tracks to reverse the direction and climb slopes avoiding long meanderings. Negrelli also demonstrates that it is **possible to run a steam-driven line with slopes of 25 per thousand and a curvature radius of only 180 meters**.





THE RETURN TO THE SERVICE OF THE HABSBURGS

Starting from 1837, the Tyrolean authorities are also interested in Luigi Negrelli's activities in the railway field and request his presence. The engineer himself is happy to return, although without severing his relations with the Swiss, as he had long ago realized the importance of a connection between Germany and Italy through the Brenner and had already established that the Inn valley and Adige valley were two routes suitable for this purpose: **Negrelli thus extends the project for the route between Innsbruck and Kufstein.** Negrelli immediately grasps the Austrian fervor for the construction of railways in order to ensure internal

mobility and the reduction of the isolation of those provinces far from the Empire and in 1840 he accepts the task of directing the works for the **construction of the Settentrionale (k.k. privilegierte Kaiser-Ferdinands-Nordbahn)**, the oldest line of the Habsburg Empire, which had to be towards the north of the Empire. Only two years later he was promoted to director of railway constructions and was given the task of designing the railway between **Olomouc and Prague and between Brno and Moravska Trebova**, in the current Czech Republic. Negrelli is also responsible for linking the Empire's railways with those of other European countries and is in fact

called up in Prussia and Württemberg, as well as for the preliminary design of the Galician lines and therefore in the direction of Russia. In the Czech Republic the name of Negrelli is also linked to an important railway viaduct near Prague, i.e. the **"Negrelliho viadukt"** on the Moldava, which can be considered the second oldest bridge in the capital. At the time of its inauguration, in 1850, with **its 87 arches and its 1,100 meters in length it was the longest viaduct in Europe**, a record maintained until 1910. This bridge is still in use and is able to withstand modern traffic, proving Negrelli's foresight in his activity as a designer.

AT WORK IN LOMBARDO-VENETO

Negrelli was transferred to Verona in 1848, as **Imperial Commissioner of Lombardo-Veneto**; here he plays a key role in the construction and reorganization for military goals of strategic transportation routes that had been destroyed during wars, such as railways, roads and bridges.

In a monograph of the Algardi it is written: *"The engineer from Primiero to whom Radetsky had given the mandate to re-organize the system of transpotation after the war of 1848-49, assumed a leading role and became the executor (but also the creator) of the overall railway strategy of the Empire in Italian areas."*

The following year he was appointed by Radetsky as **Director of Public Buildings in Lombardo-Veneto**, to deal with roads,

hydraulic works and above all railways.

The Primiero native engineer is then entrusted with the so-called **Meridionale (k.k. privilegierte Südbahn)**, the **redesign of the essential Venice-Milan line**, of which there were already some stretches, now obsolete or seriously damaged. The project of 1849 differs a lot from the previous ones, favouring a line that is not straight, but passing through the numerous main centres and with **branches to allow a subsequent development of the network towards the south**. The first section inaugurated is Verona-Vicenza, while a year later Verona-Mantua and Mestre-Treviso are also opened. Meanwhile, the engineer also plans the regulation of the Adda and some sections of the Po, in 1852 the Verona-Brescia section and the following

year the Verona-Bolzano section, thus completing the **project to cross the Alps** started with the railway in the Inn valley. His work continues with the connection to Trieste. However, Negrelli does not deal with purely engineering aspects: in fact he **is active in safeguarding the artistic heritage**, intervening for example in the restoration of the Arco dei Gavi in Verona, an ancient Venetian bridge and the Ducal Palace itself, thus proving his passion for art.

THE LOMBARDO-VENETO KINGDOM

The Kingdom was established in 1815 following the Congress of Vienna, uniting the current territories of Lombardy, Veneto and Friuli, and formally dependent on the Austrian Crown. During its existence education, economic development and the improvement of the Administration will be encouraged. However, the strict dictates of Vienna and the harsh policy of control

and repression of the patriotic Unification activities will make the domination from beyond the Alps hated by the local population, which repeatedly tries to rebel. The kingdom was deprived of Lombardy in 1859 following the Second War of Independence and ceased to exist in 1866, when Veneto was also transferred to the newly established Kingdom of Italy.

A TEMPORARY SETBACK AND REHABILITATION

Luigi Negrelli's **promising and intense career came to an abrupt stop in 1855**. In fact, his work was fuelling disagreements between some officials of the Viennese court who were pushing for the dismissal of the engineer from all positions. These parties then convince the Emperor to have the Lombardo-Veneto railroad inspected and **accuse Negrelli of negligence** in his work, accusing him of being responsible for all the problems he himself had reported before to the government. The purpose of the report drawn up afterwards was to **block Negrelli's ascent**: the accusation for the most part included an immediate sentence with no possibility of appeal. To aggravate the conviction **rumours about alleged anti-Austrian sentiments**

are put into circulation, to be connected perhaps to the **criticisms of the repressive system put in place by the Emperor** with regards to the revolutionary motions and to the tendency of defending weak people. Finally, on **September 1, the decree of the Emperor arrives and Negrelli is removed from office** within the Austrian apparatus. The work as a representative of a state considered repressive by the local populations, the perception, by his own admission, of being considered Austrian by the Italians and Italian by the Austrians, as well as the setback of his career almost at its peak, constitute important elements of disappointment, which aggravate his dismissal. However, other sources refer the reasons for the dismissal not to alleged

patriotisms, among other things never shown by Negrelli, but to **internal disputes over the Suez Canal project, between the favorable party and the opposite party, pro-English**. Negrelli is in fact the spearhead of the project and of the company and it is therefore probable that British exponents wanted his dismissal to stop the construction of the Canal. The following year, in **1856, also thanks to the intervention of Radetzky** in person, after having informed the emperor Francesco Giuseppe about the current state of work for Suez, Negrelli **was completely rehabilitated**. Having all charges against him been dismissed, **he was appointed General Inspector of the Austrian railways**.

FIELD MARSCHAL RADETSKY

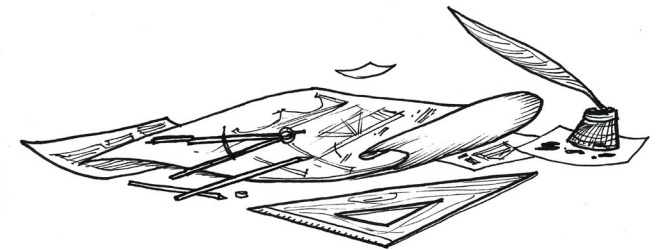
Johann Josef Franz Karl Radetzky, count of Radetz, was born in Bohemia in 1766 and began a military career, reaching the prestigious rank of Field Marshal. After having fought in the Austrian armies against Napoleon's advance, he was sent to northern Italy to quell the uprisings. He later became the military governor of Lombardy. He is mostly famous for the repression of

the Five Days of Milan and for the defeats inflicted on the Savoyards during the First War of Independence. Appointed Governor of Lombardy-Veneto, his policy of repression attracts the ire of the Risorgimento patriots. He died in Milan in 1858. The famous Radetzky-Marsch, composed by Johann Strauss father, is dedicated to him.

GREAT ENGINEERS OF HIS TIME: PROFESSIONALISM AND FRIENDSHIP

In his lengthy career, Negrelli finds himself practicing his profession alongside important personalities in the engineering and architecture landscape: a relationship that goes beyond formality, with mutual attestations of esteem and friendship, very often emerges from the exchange of letters:

- **J.M. Schemerl von Leythenbach, F.A. von Gerstner and Friedrich Schnirch** inventors of **new techniques for bridge construction**. Negrelli comes into contact with leading exponents of the sector - these last two in particular - decisive in the future passion of the *primierotto* engineer for the railways.
- **Joseph Anton Nauss**, of which Negrelli is named "deputy" in Bregenz. He also shares the fate of the family: he is the best man at his wedding with Amalia Pierkenau, and his daughter, Josefa Antonia, marries Luigi's brother himself.
- **Johann Ebner von Rosenfeldstein** (1839-1876), is the district captain of the Vorarlberg. He establishes a climate of trust, so much so that he has the opportunity to praise the work of Negrelli with his superiors.
- **Joseph Duile** (1776-



1863), South Tyrolean engineer, with whom Negrelli collaborates on the important Swiss regulation of the Rhine.

- **Martin Escher-Hess**, Head of the Directorate of the Zurich Chamber of Commerce. He also asked Negrelli to collaborate with him, as General Inspector of the Austrian State Railways for the Basel-Zurich line, and this clearly reflects the confidence in the professional qualities of Negrelli himself.

• **Carlo De Ghega** (1802-1860) and **Ermenegildo Francesconi** (1795-1862), two pioneers in the history of the Austrian Empire railways. With them Negrelli collaborates on the most important rail and road projects, trying to integrate state lines with private ones. These engineers, all from Italian-speaking territories, have the merit of knowing how to create a harmonious link between the regions

of the vast Habsburg empire and its neighbouring states. De Ghega is famous for the **Semmering line**, the first that crossed the Alps, whose difficulty lay in the fact that a simple-grip railway without racks was wanted here, according to a hypothesis supported by the same Negrelli. Francesconi, on the other hand, designs numerous roads in the Dolomites, such as the road to Alemagna and regulates many rivers, including the Isonzo. In the railway sector, he designs the Vienna-Bochnia route in Galicia.

THE MAIN WORKS

ROADS

1. Valsugana
2. Venosta Valley
3. Vorarlberg
4. St Gallen
5. Appenzell
6. Zurich

HYDRAULIC WORKS

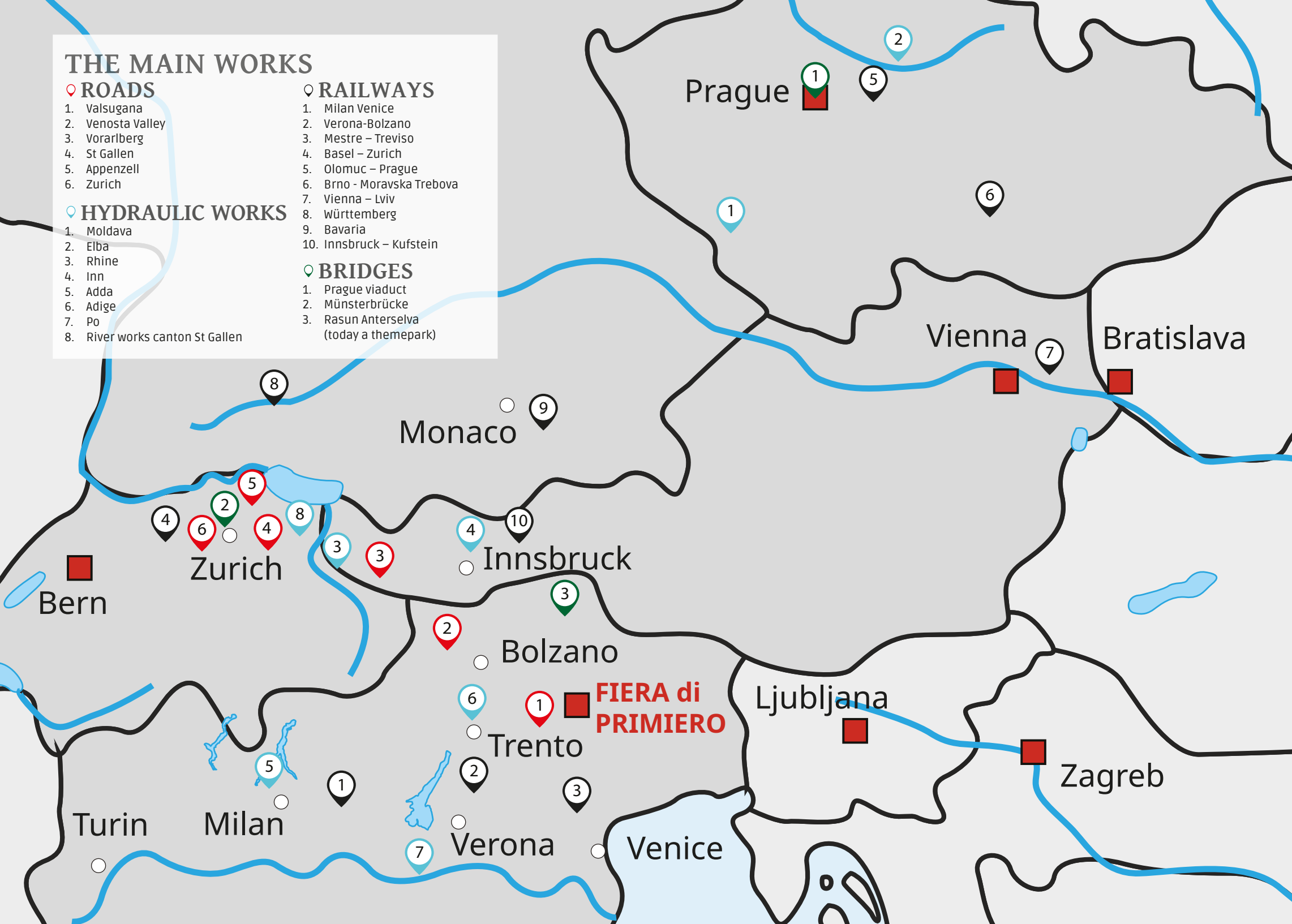
1. Moldava
2. Elba
3. Rhine
4. Inn
5. Adda
6. Adige
7. Po
8. River works canton St Gallen

RAILWAYS

1. Milan Venice
2. Verona-Bolzano
3. Mestre - Treviso
4. Basel - Zurich
5. Olomuc - Prague
6. Brno - Moravska Trebova
7. Vienna - Lviv
8. Württemberg
9. Bavaria
10. Innsbruck - Kufstein

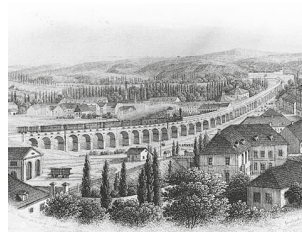
BRIDGES

1. Prague viaduct
2. Münsterbrücke
3. Rasun Anterselva (today a themepark)



THE PRAGUE VIADUCT

The Prague railway viaduct, known as the "*Negrelliho Viadukt*", crosses the Moldava in the Prague district of Karlin. This work represents the second oldest still existing bridge in the city and, at the time of its inauguration, on 1 October 1850, with its 1100 meters and its 87 arches it was the longest viaduct in Europe. The bridge has recently been refurbished to accommodate today's traffic.



THE MÜNSTERBRÜCKE

The Münsterbrücke, located in Zurich on the Limmat river, is one of Negrelli's greatest successes in life. Built between 1836 and 1838 entirely in stone and inaugurated with great celebrations, it connects two of the most hectic neighbourhoods of the Swiss city and was designed with great foresight already. The name is due to the two churches located on the opposite banks, Fraumünster and Grossmünster.



THE RASUN ANTERSELVA BRIDGE

Designed during the reconstruction of the Val Pusteria imperial road and inaugurated in 1847, it is one of the monuments of alpine road engineering. The bridge is built entirely of stone and is 180 meters long. In operation until 2008, it has now been replaced by a modern viaduct and this has allowed its restoration. The history of the bridge in its three phases has been reconstructed in the open-air museum also dedicated to Negrelli.



THE ZURICH – BASEL

The Zurich-Basel railway, which originally stopped in the city of Baden, constitutes Switzerland's first railway and Negrelli's first project in this sector. The aim was to connect the two most industrialized cities of the Confederation and foresee the crossing of large rivers and the subsequent enlargement towards other cities. The inauguration took place in 1847, with a journey lasting 33 minutes.



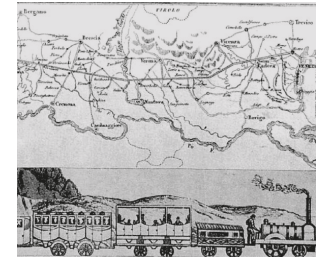
THE CANALIZATION OF THE RHEIN

The work for the regulation of the river Rhine, on the border with Austria and Switzerland, is one of Negrelli's first tasks, as soon as he arrived in Vorarlberg in the 1820's. The embankment works were not only to prevent future floods, but also to create new transportation routes, both by road and river. His projects then became the basis for major regulation works of the late nineteenth century.



THE "MERIDIONALE"

With this name the railway between Milan and Venice was known. When Negrelli arrived in Verona, there were only a few sections in Lombardy, but they were already obsolete. The engineer thus has the task of closing the track by completing and reconstructing the sections already present to guarantee a functioning network that could be quickly expanded for military purposes. The various works were inaugurated between 1849 and 1855.



THE "SETTENTRIONALE"

Known as "*k.k. privilegierte Kaiser-Ferdinands-Nordbahn*", it is the railway that still connects Vienna to the regions of Bohemia and Moravia. At the time it was the first railway to be built in the Austrian empire. Since 1842 Negrelli is tasked with designing the railway lines between Olomuc and Prague and between Brno and Moravska Trebova, as well as their connections to the border, still exploited today by the Czech railway network.



THE VERONA – TRENTO – BOLZANO

This railway was intended to connect Tyrol from north to south, from the Inn valley to the Adige and then to Lombardo-Veneto. The design of the section in the south, from Verona to Bolzano, is entrusted to Negrelli and the inauguration takes place in 1859. With the opening of the section between Bolzano and Innsbruck, this becomes the second mountain railway of the empire, as well as the first to completely cross the Alps.



THE SUEZ CANAL



The **Suez Canal**, a great work of engineering that **connects the Mediterranean Sea and the Red Sea**, from port Said to Suez, in Egypt, has great strategic importance for the routes of world trade with the near and far East. A twisted story and one that is still evolving. There have been

in fact numerous ideas, projects and **attempts at construction from ancient times to the nineteenth century**. Many illustrious figures have been involved in the matter of the Canal throughout history: from diplomats to engineers, even philosophers to the Pope.

Everything, however, comes to **fruition with Luigi Negrelli's project**, which made this work the **ultimate goal of his life**. His passion and his expertise made him stand out from all his colleagues at the time, but the struggle for recognition of authorship on the project was long and

difficult. Nowadays the Canal is **constantly expanding** in order to adapt to new technological needs.

A WATERWAY THROUGH THE ISTHMUS THROUGHOUT HISTORY

The idea of a cut in the Isthmus of Suez, in Egypt, has distant roots in history. **Already in Egyptian times**, in fact, there **was an artificial canal that led from Cairo to the Red Sea**.

This was first improved by the Persians and then by the Romans. However, the canal was buried in sand during the Byzantine era and was no longer used. The first to have an idea **in modern times are the Venetians**, in order to shorten the spice route, bypassing Arab land and thus result-

ing in a lower cost of goods. The Portuguese had in fact circumnavigated Africa and Columbus had discovered America, thus making the Mediterranean marginal in trade. Numerous are the reports of Venetian ambassadors in Egyptian land who try to convince the sovereigns or report massive work on the reactivation of the route by the Turks, but a working canal could never be achieved. **Already at the time, however, there is talk of a direct cut that would no longer have followed the old canals**

of the Nile. **From Turkish sources we know instead of an imposing attempt of restoration towards the end of the 1500's, but which is then abandoned due to the excessive workload**. Only with the end of the 1600's did the first scientific projects arrive, deriving also from illustrious minds such as that of the German philosopher Leibnitz, and the **definitive proof that there is no difference in level between the two seas**, as was mistakenly believed since ancient times.

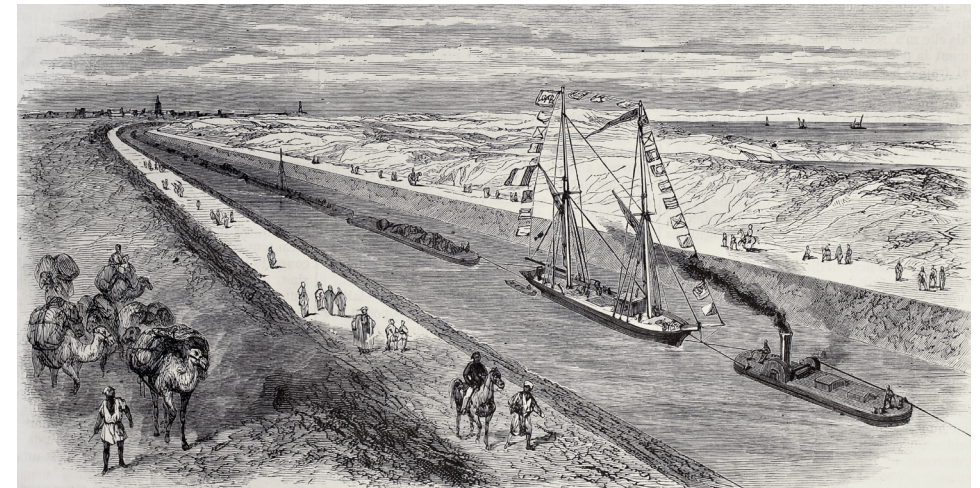


For a whole century there is no more news until **1775**, when the Italian **Antonio Maria Lorgna** (1735-1796) proposes a sort of feasibility study in which he foresees an international collaboration and **describes his idea of the work, presented as the division of the Nile branches into two large canals, one flowing into the Mediterranean and one into the Red Sea**. A few years later the French **baron de Waldner**, in a broad diplomatic

plan for the Near East, presents the **first project of a direct cutting** for a length of 28 leagues, from the Sirbonide lake, therefore more to the east of the current entrance.

Only the Napoleonic expedition gives real impetus to the design. With Napoleon, in fact, **Jean Baptiste Lepère** (1761-1844), a French architect, whom described his hypothesis of the cutting in a report in 1808, arrived in Egypt. The cutting of the canal would

have occurred in three sections: the first one along the old pharaonic canal, the second along the Nile, the third along the Alexandria canal to the Mediterranean, **for a total of 4 locks, in order to get around the alleged difference in level between the two seas, and an average depth of 15 feet**. The defeat of Waterloo means that the project, the first of scientific template, is temporarily shelved.



After the French domination, the throne passed into the hands of **Mohammed Ali Pascià**, under whom a **great boost was given to the modernization of the country** with the arrival of many European engineers. Even the Saint-Simonians hypothesize in this situation a connection between the two seas and go to Egypt

to study this. **Barthelemy Enfantin brings together a team of engineers** and his studies are at the foundation of Negrelli's projects. Also on this occasion the **attempts fail due to the indifference of the European powers**, who are too busy in the climate of the Restoration. Pascià is also aware of the importance of the work,

he fears infiltration of foreign powers, especially by the English and therefore puts the brakes on the undertakings. However, we must give credit to Enfantin for the great campaign of awareness regards the problems surrounding the Suez: **in 1846 the Suez Canal Study Society was founded in Paris**.

NEGRELLI GETS CLOSER TO THE IDEA OF THE CANAL

Luigi Negrelli apparently became interested in the Canal in 1838 while working in Zurich, when he met the German scientist **Alexander von Humboldt**, who would have encouraged him to have his say on the construction of the work.

Even Austria, under Metternich's push, had project ideas, especially to **relaunch Trieste from a commercial point of view and for the economic rise of Central Europe**. In 1842 the first preliminary project of Negrelli arrived and his interest grew from 1846 onwards, when

he was called to the Suez Canal Study Society. **His letters and studies show the seriousness and the passion with which he immersed himself into the project**. In a letter in 1846 to the Chamberlain for Austrian Monetary Affairs, Kubeck, the project is briefly described.

The cutting of the canal should have taken place near the openings at Suez and Porto Said, each about 8 miles; the rest would have been obtained with the enlargement of the old Red Sea canal, some locks would also have prevented the silting up.

Negrelli also hopes that a pan-European company will be set up to carry out the work.

The Suez Canal Study Society is divided into 3 national groups: the English one led by **Stephenson**, the German one by **Negrelli** and the French one by **Talabot**. Everyone must commit from scratch to a thorough study of the canal. **Negrelli would have dealt with the Mediterranean coast**, Stephenson that of the Red Sea and Talabot of the internal connection. Only the French and Germans, however, go to Egypt for surveys while Stephenson tries to hinder the work by proposing to **Pascià the construction of a railway**, certainly more convenient from a financial point of view, but also a military one. **Negrelli himself moved to Egypt in 1855 to carry out the inspection of the Pelusio Bay, where he identified the point for the outlet, which is today's Port Said**. The total cost is calculated to be 200 million francs.

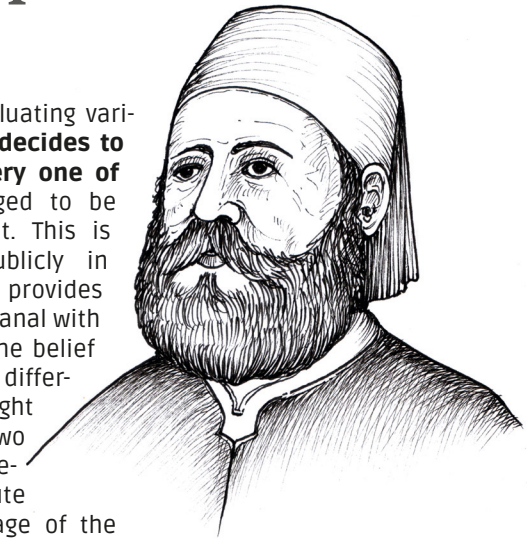


THE FINAL PROJECT AND CRITIQUES

Meanwhile, the death of Abbas-Pasha had come and **Mohamed Said**, much more inclined to the Europeans, had ascended the throne. He will bring **Ferdinand Marie de Lesseps** (1805-1894), a French diplomat and his great childhood friend, to Egypt, who initially refuses the concessionary act proposed to him. The official act arrived only in 1856, together with the **establishment of the Universal Company of the Suez Canal**.

This assembly is in stark contrast to the Society of Studies of which **none of those engineers are invited except Negrelli**, because of his great competence in the field and to obtain the support of the Habsburg monarchy, allied with the Ottoman one. The commission it-

self, after evaluating various projects, **decides to adopt the very one of Negrelli**, judged to be more efficient. This is presented publicly in March 1855. It provides only a direct canal with no locks, as the belief of a 10-meter difference in height between the two seas was refuted. The route takes advantage of the Amari and Timsah lakes, supplied with fresh water from a canal coming from the Nile. This canal would have had no danger of silting up thanks to the natural movement of the tides. **The northern entrance would have been built at Pelusio and the one to the south near Suez**, both protected by dikes in order to limit the flow of sand in the canal.



However, **the English group does not like the idea and strongly criticizes Negrelli's project** with a public speech. Nevertheless, the scientific community defends it, even contesting the idea of Stephenson's railway. **Negrelli himself is repeatedly forced to respond to criticism by contacting the editor of the Times directly.**

THE CASE OF THE AIDA

The "Aida" opera by the Italian musician Giuseppe Verdi, which tells of the love story of the Ethiopian slave Aida at the time of the Egyptians, is often said to have been composed for the occasion of the inauguration of the Suez Canal, on commission of Governor Ismail Pascià, in reality this conviction is inaccurate: indeed the original idea was this, but Verdi initially

declined the request, declaring that he did not compose music for special occasions. The Pascià then convinced him by claiming that in reality the show would inaugurate the Cairo theatre. The opening show was however postponed due to the Franco-Prussian war and instead of taking place in 1869, it was held in 1871.

In August 1858 Pascià finally gave the technical direction to Negrelli, but unfortunately the engineer died on October 1st. Work begins the following year. In 1863 under the reign of Pascià Ismail a new phase of fervour in the construction is started, so that with a fast rhythm the **Canal is finished in 1869 and grandly inaugurated on November 17 of the same year.** The honours are all bestowed on Lesseps, as well as the authorship of the work, which he wanted at all costs rec-

ognized for himself, even in a fraudulent manner: he in fact cancelled the name of Negrelli from the list of the founders of the canal. To him we owe not only the technical-scientific aspect of the Canal, but also his great work of promoting and publicising. However, in addition to Negrelli and his project, it is still **necessary to acknowledge the honour of the hundreds of thousands of Egyptian peasants who worked for ten and a half years, even losing their lives en masse**, in order to create

this impressive work. Linant de Bellefonds, another engineer dedicated to the Canal, will say of Negrelli: *"The one of the commission who was the most distinguished was Negrelli: he saw things from above, in big, like a genius".*

THE OTHER SUEZ PROTAGONISTS

The Suez Canal, despite the final design of Negrelli, would never have been realized if two other important figures had not intervened. The first is **Ferdinand Marie de Lesseps**, a French diplomat and entrepreneur, born in Versailles in 1805. He, after having worked in embassies in



Ferdinand Marie de Lesseps

Europe and North Africa, is sent to Egypt, where he becomes friends with the Pasha and is interested in making the cut of the 'isthmus. With his tenacity he takes Negrelli's projects and obtains the authorization of the Ottoman government and the necessary funds for the start of the work. Thus, he created a company with millionaire capital and thanks to him English resistance to the canal was also won. At the end of the work he attracts all the honours, condemning Negrelli's actions to oblivion. After the success of Suez he turns his gaze to the Panama Canal, but the failure of the company stops his enthusiasm. He died in 1894.

The other protagonist of the story is precisely the Pasha of Egypt at the time, namely the governor on behalf of Istanbul, **Mohammed Said**. Governing from 1853 to his death in 1863 and therefore before the end of the works. Once the work has begun, he sees a profound crisis approaching due to the purchase of shares of the French company with public funds and the lack of rural labour in the countryside that was subtracted due to the construction site. He must also renounce territorial sovereignty over the Canal.

THE SUEZ CANAL TODAY

The Suez Canal has allowed a **reduction in the length of shipping routes from 30% to 60%**, and this testifies to its strategic importance for trade with the East. The route starts from Port Said and crosses the Menzolah lagoon for 60 kilometers and then turns to meet Lake Timsah, where fresh water flows from a branch of the Nile, then crosses the Amari lakes to Suez on the Red Sea. **The length of the actual Canal as per the project is 163 kilometers, plus the port works for a total of about 170, the original width was 53 meters and the depth of 8 meters.** Fundamental to the Canal,

something for which the Pasha of Egypt has always been fought, is its **neutrality**, so the naval passage to all nations is assured: this until 1967, when due to friction between Egypt and Israel it even reached total closure. The Canal, due to its great importance, has always been at the center of growing merchant flows that have made **numerous extensions necessary. One of the most massive dates back to 1975 with the enlargement of a further 140 meters, a depth reached of 20 meters and the chamfering of numerous curves** that were not foreseen in the original project. Following the latest modernization,

which began in 2014 and opened in 2015, many sections have been doubled: **the total length reached is therefore 193 kilometers, depth of 24 meters and the minimum width of 200 meters.** The current passage is about 15 hours. Now the Canal allows the simultaneous passage of many ships, even large ones. **In the future, other expansion works are planned** in order to further reduce the crossing time and to allow the transit of larger ships.



LUIGI NEGRELLI IN BRIEF

A short summary will be useful for anyone who wishes to have a brief but complete overview, as a first approach, of the status of this character.

EARLY YEARS

The engineer Luigi Negrelli was born in Primiero in 1799 and was baptized in the present Arcipretale Church, located near his birthplace. Throughout his life he will never lose contact with this beautiful valley either through regular visits or continuous correspondence he had with his family who lived here.

FAMILY

Son of Angelo Michele, wealthy merchant and landowner, and Elisabetta Württemberg, he is part of a large family, marked by an important network of relations with the most prominent members of society of the time. The Negrelli story is entwined with that of great history, so much so that some of them - Luigi in the first place but also the others - will come into contact with leading figures: Count Welsperg, but then also popes, emperors, internationally renowned engineers and even Marshal Radetzky

himself, to name only the most important.

STUDIES

His education, at first private, with the teacher Serafino Pastorini, continues in Valstagna (the place where the family originally from Genoa had settled before arriving in Primiero) and Feltre. He will then leave for Innsbruck, for an internship at the Royal and Imperial building commission of Tyrol and Vorarlberg, of which he will later become a member after completing his studies.

WORKS

Luigi Negrelli is known to the general public for being the creator of the Suez Canal project. It should not be forgotten, however, that in addition to this work of great value, he has had the opportunity to try his hand as an expert engineer in the field of transport, designing road systems, latest generation bridges, also dealing with river regulations (eg the Rhine) and safeguarding artistic heritage.

His role was crucial in the construction of the Zurich-Basel railway, the Milan-Venice, the Verona-Brenner and significant sections in the north-eastern part of the then Austrian Empire. During his career he came into contact with the most important engineers of the time, such

as Duile, Nauss, Carlo de Ghega and Ermenegildo Francesconi.

TRAVELS IN EUROPE

His first course of studies along with hectic work activity then lead him to continuously move around the entire European continent: in Switzerland, in the territories of the extensive Austrian Empire, in France, in Belgium and in England in order to further develop the central theme of rail-

ways. In these places he has the opportunity to meet important experts, to develop his skills that have made him famous throughout the world.

LOVE LIFE

In Innsbruck he is hosted by the Countess Welsperg friend of his father, falling in love - reciprocated - with her daughter. His early economic situation as a young engineer does not allow the crowning of this love. He will later marry Amalia von Pirkenau, who will bear him three children but will then die prematurely. He then remarried with Carolina Weiss Starkenfels, his beloved "Lotti", who in turn will make him the father of five children again, two of whom will have as their godfather Marshal Radetzky, his great friend and collaborator.

THE SUEZ CANAL

The Suez Canal is certainly the work that gives the most prestige to the engineer and the reason why he is universally known. Negrelli is the last, but most important link in the history of the canal, an idea deeply rooted in the past. After countless attempts by Egyptians, Romans, Ottomans in antiquity and the Middle Ages, it is the mechanism of scientific studies from the

eighteenth century that leads Negrelli to prepare his final project.

Negrelli is called to Paris to the "Society of Studies" first, and then to the "International Commission", where his idea of a direct canal between the Mediterranean and the Red Sea, without locks and which exploited the internal lakes, is acclaimed as the best.

Unfortunately, the beginning of the work takes place posthumously due to his early death, on October 1st 1858, so that the burden and the honor of having conceived this fundamental work for the trade routes are attributed to the French entrepreneur Ferdinand Marie de Lesseps. The Canal was grandly inaugurated in 1869, leaving Negrelli in the shade.

ACKNOWLEDGMENTS

His activity between the Moldava and Elba rivers, also earned him the conferral by the emperor of a noble title "van Moldelbe" (in reference to the places just mentioned), thus becoming a full member of the Habsburg nobility. However, many are the posthumous tributes, above all the prestigious International Negrelli Prize.





M E R

M E D I T E R R A N É E

M E R

R O U G E

THE AUTOBIOGRAPHY

DIARY OF 1831

The diary (*Ausflug nach Frankreich, England und Belgien*) written in Bregenz (Vorarlberg) **reports facts of work and family life.** The accurate transcription of the original German document helps to overcome the rhetorical description that usually characterizes

the portraits of these great people, through **a less idealized but more authentic vision.** What emerges is a man with a strong personality, of a right and sensitive mind, but firmly convinced of his own ability and dignity. With a high concept of his task and his position, and therefore

intolerant towards whom, his wife, his father-in-law, his circular engineer, even the state apparatus, disturbs, jeopardizes, hinders, even if only by behaving differently to his principles, what he considers a mission.

A JOURNEY THROUGH FRANCE, ENGLAND AND BELGIUM

Here he notes the thoughts and motivations that led him to a more in-depth study of the railways. **He supports the validity of railways for industrial purposes and is a firm believer in its development in mountain areas.**

"It was not the theory of the railways that attracted me to foreign countries. Having knowledge of the influence that better rail and road communication have on culture, mobility, trade, industry and on the well-being of entire regions, I wanted to know above all the effect of the greatest mean of communication of our time has on everyday life in the vicinity and in different

countries to understand what the inevitable drawbacks and disadvantages are." **This diary is not a simple scientific report, but it is a real reportage full of descriptions, personal comments and curiosities.** The annotations range from materials, to maintenance, from issues related to inclines and safety. Of his experience

as a passenger on a French line he writes for example: *"to myself it happened that after 3 minutes of being on a carriage from St Etienne to Roanne I ended up in a ditch with another 40 passengers without however none of us being injured".* Or again of the London to Greenwich: *"a picture of great perfection".*



AWARDS FOR

ZURICH'S MÜNSTERBRÜCKE

A significant **tribute to his tireless activity comes from the design of the Zurich Münsterbrücke**, a stone bridge built at the time on the river Limmat, which earned him **the gift of a gold medal**, coined for the

great event (1838): Three copies of the latter are still preserved at the Swiss National Museum in Zurich and two hundred years after his birth, copies have been reprinted in silver and bronze for the Negrelli Museum in Fiera di Primi-

ero. For this bridge - made of white granite and still visible after the restoration work - **great celebrations are held**, with the closure of public and private establishments, posters, inaugural speeches and fireworks.



SPECIAL THANKS FROM THE AUTHORITIES OF ZURICH

To Mr Ludwig Negrelli Senior Engineer of the local Chamber of Commerce

Dearest Sir! During your stay in Zurich during these years, with your knowledge and your art you are made worthy of glory, we are cer-

tain that these testimonies of your talent will survive again in the coming centuries [. . .] Even when the city of Zurich will not be lucky enough to use your skills and talents, so its inhabitants hope, however, that a friendly memory will

sooner or later bring you back to this place, where you have created so many beautiful things and where the happiest and most grateful welcome awaits you at all times

THE BESTOWAL OF A NOBLE TITLE: KNIGHT OF MOLDELBA

His successes on a professional level are worthy of the **conferral by the emperor of the noble title knight of Moldelba (1850)**, thus becoming part of the high-ranking leadership of the Habsburg State. He chose

the name "van Moldelbe" to recollect **his work in the regions crossed by the Moldava and Elba rivers**: "This predicate derives from Moldava and Elba because the undersigned is pleased to have carried out for the State the works

in the valleys crossed by those rivers from Prague downwards. Also, having managed the construction of the great Prague railway bridge and the entire railway line from Olmutz and Brunn via Prague to the borders with Saxony."

OTHER TITLES

He is also, just to name a few, knight of the Austrian Order of the crown, a knight of the Order of the Red Eagle of Prussia, knight of civil merit of the kingdom of Saxony and knight of the Kingdom of Württemberg;

Senior Director of public works in the Lombardy-Veneto Region, President of the international commissions for the navigation of the Po River and for the Central Italian Railway, Chief Engineer of the Swiss Confederation, Member of

the Società d'Etude and of the International Commission for Studies of the Suez Canal, as well as author of the executive project and inspector general of the works of the Suez canal

TRIBUTES

Numerous awards have been bestowed on Luigi Negrelli: from the naming of numerous **streets and squares, in many Italian and foreign cities** and countries, to the dedication of **plaques, monuments, paths and schools**, including the local middle school. This small guide and the garden dedicated to him located in the heart of Fiera are part of a more substantial project for the 150th anniversary of the

opening of the Suez Canal, which will culminate with a scientific conference in which the **fourth edition of the international Prize** will be launched. Initiatives for celebratory purposes will also take place on Egyptian soil (Cairo). Among the most unusual tributes we also find a composition, **the Negrelli Marsch** (*Musicalische Erinnerung an Alois Negrelli*, 1995), composed by the Austrian Franz Heller for a wind instruments or-

chestra and distinguished by the presence of an oriental motif that evokes the Egyptian experience of the Suez Canal. Not to be forgotten is the **Negrelli pond**, located next to the renowned Baita Segantini (mountain cabin) that looks towards Cimon della Pala and so named by Alfredo Paluselli in the 1930's. **A Dolomite peak is also dedicated to Negrelli**, called Torre Negrelli, located near Cima Sedole, in Val Canali.





RECOGNITION OF LUIGI NEGRELLI

THE NEGRELLI INTERNATIONAL AWARD

This is an initiative of the Primiero community to reward international engineering works, linked to the use of railways. So far three editions have been held:

- 1996 **Awarding of the prize to the Eurotunnel**, a railway tunnel under the English Channel, which made mobility between France and Great Britain faster. Prince Philip of Edinburgh in person presented

ed the prize at the awards ceremony held in Primiero.

- 2001 **Awarding the company that created the Shinkansen System** of Japanese Railways.

- 2008 **contest of ideas for a project of modern re-elaboration of a road bridge** created by Negrelli in Munster-Zurich, won by the young Emanuele Fornalè.

- 2019-2020 The announcement for tenders

of the fourth edition will be published soon. It is a **competition for ideas regarding sustainable mobility and connections in the Alpine territories** in the third millennium.



THE DOCUMENTATION CENTER AND THE NACHLASS NEGRELLI

To the Award was then added an in-depth and precise work of collecting archival material - dislocated and fragmented between Innsbruck, Vienna and Rome and other cities - which led to **the development and setting up of the documentation center Luigi Negrelli** (with the precious collaboration of Professor Andrea Leonardi of the University of Trento). In 2002 we proceed with the complete bibliographical survey on Luigi Negrelli

and his work, as well as the inventory and complete **reproduction of the most important archival collection** containing handwritten documentation: the Nachlass Negrelli, preserved in **the archive of the Technisches Museum in Vienna**. The latter consists of **2389 documents** corresponding to as many archival records, 2063 of these include images, and therefore provides very important material for anyone wishing to approach Luigi and the whole Negrelli

family. **The documentation can be consulted freely for study and research on the Primiero community website.** Reproduction, duplication, disclosure, dissemination and public sale of copies obtained for personal use are absolutely prohibited; the publication and reproduction of documents in any form is only possible with the authorization of the Technisches Museum in Vienna.

THE NEGRELLI FOUNDATION

The Luigi Negrelli Foundation is a non-profit organization founded in 2008 with the aim of supporting initiatives enhancing and qualifying the engineering profession. Over the course of this decade it

has operated as a service organization, in close synergy and directly on behalf of the Order of Engineers, of which it represents a sort of operative arm.



THE COMMEMORATIVE PLAQUE

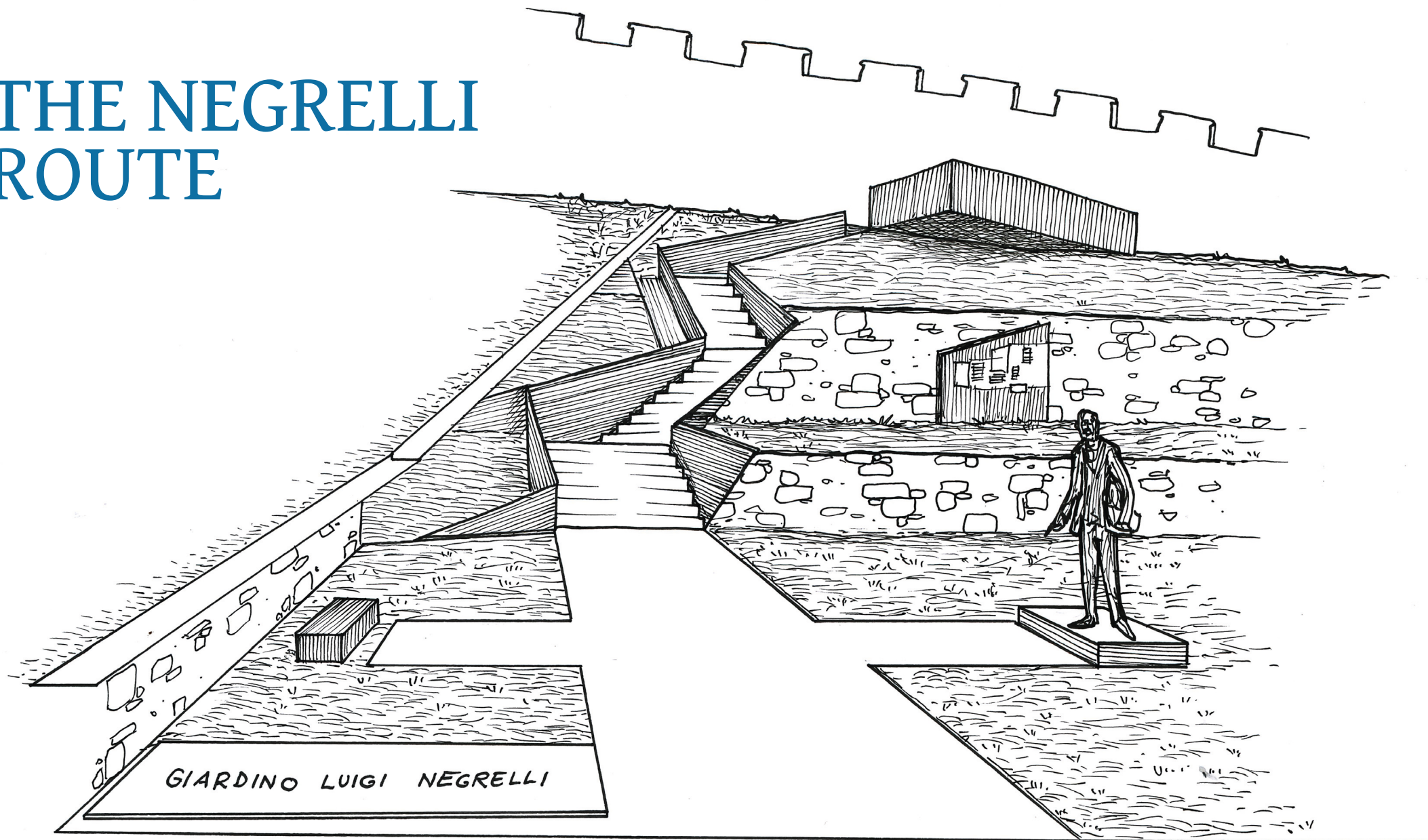
In an edition of the **illustrated magazine Italia Bella** entirely dedicated to Luigi Negrelli in the year 1913, it reports on the commemorative plaque placed in the same year on the façade of the birth house of the Primiero engineer.

The initiative is promoted and sponsored by the **Collegio Tridentino of engineers and architects**, in synergy with the local **Society for promotion and tourism in Primiero**.





THE NEGRELLI ROUTE



It is a **brief itinerary to discover the places, of Luigi Negrelli primarily, but above all of his family context**, which is interesting in itself and fundamental to better understand the personality of the famous Primiero engineer. The route starts from the Inter-municipal Library,

through the historic center of Fiera di Primiero. From piazza Cesare Battisti, next to the small church of the Madonna dell'Aiuto, you go down the "Contrada" (district) to the ancient Palazzo Welsperg, now home to offices and shops. Beyond the charming view on the so-called

Rivetta, continue along the main road towards Mezzano for about 100 meters up to the Negrelli Garden. A spectacular staircase allows us to go back up to the Palazzo delle Miniere where the Negrelli Museum is located. This place rich in history is overlooked by the Arcipretale Church in

which he was baptised and by the house of his birth. From there, a very pleasant walk along the renovated Viale Marconi leads towards the meadows of Molarén and gives the opportunity to briefly mention the conspicuous, land holdings of the family.

NEGRELLI ARCHIVE

The Inter-communal Library holds a **documentary fund** on the engineer **Luigi Negrelli and his family - a heterogeneous collection composed of monographs, autographed documents, articles, digital**

files, photographs, drawings, deposited and / or collected over several decades and cared for by the staff. It contains, among other things, the original manuscript of the Memoirs of Angelo Michele Negrelli, handwritten letters and

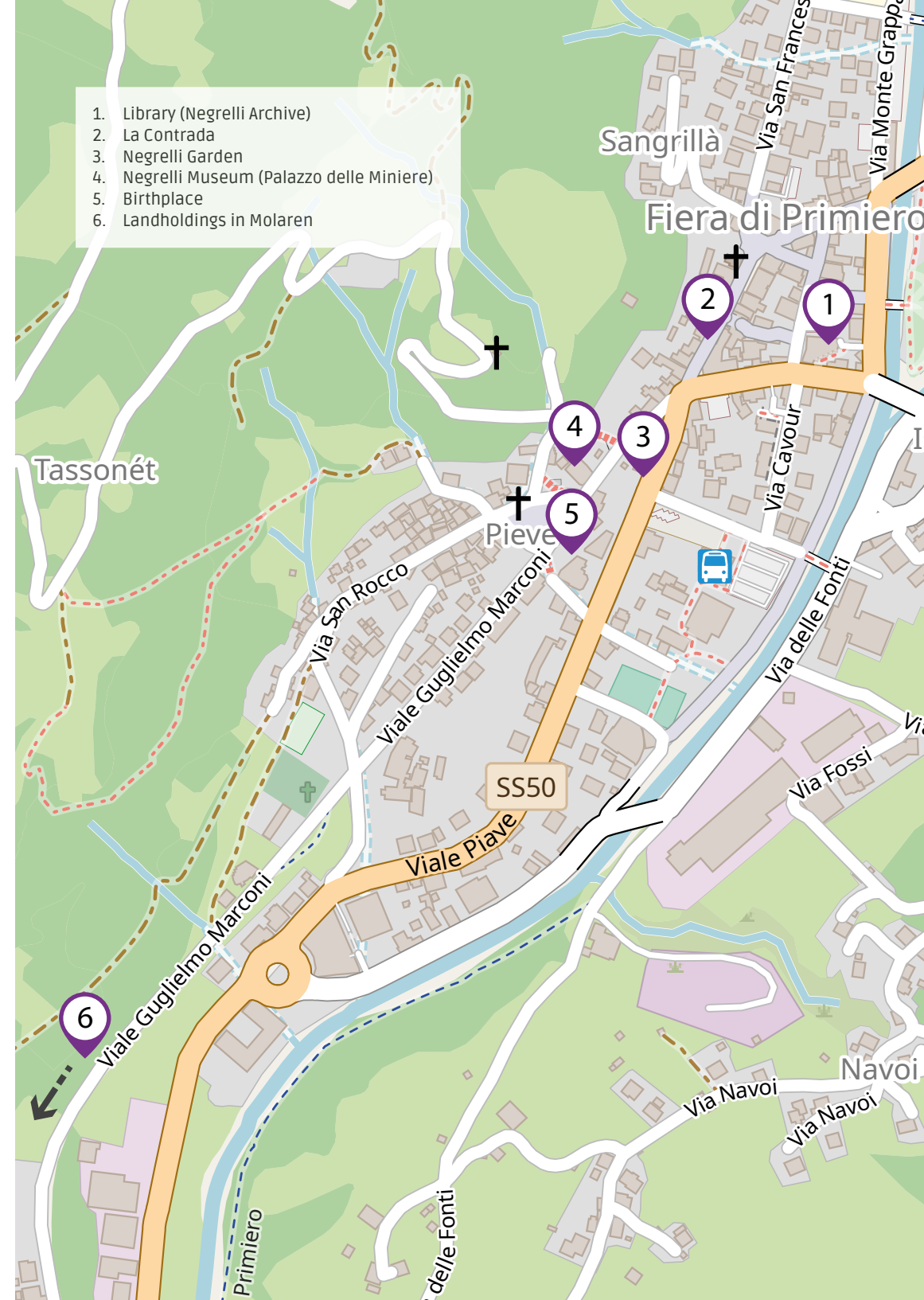
drawings and printed books on Luigi Negrelli. It is possible to view a digital version of the cataloging, while a real consultation is allowed only for **specialist studies**, subject to authorization.

THE CONTRADA

The pedestrian area in the historical center of Fiera di Primiero, is the so-called **Contrada**: this ancient street, devoid of rural character that distinguishes it from other villages, reminds us with its ancient brightly coloured buildings of towns

of Nordic character. In this scenario, **Angelo Michele Negrelli emerges as the undisputed champion in the ball game**. As well explained by Gigi Corazzol in his book *La Palla di Farra di Mel*, the game in question "is not football but that in some ways what

it resembles [...] The need to play along a wall. The ball, however, is relatively light, plus it is legitimate to hit it even with the part of the leg between the feet and the knee".



THE NEGRELLI GARDEN

Going down the Contrada, once you get close to the gentle climb leading to the Arciprateria Church, continue straight on for a few meters along the main road that leads to Mezzano, on a level with the bus station. Here is the **new Negrelli Garden (2019), dedicated to the engineer, built 220 years after his birth and 150 years since the opening of the Suez Canal.** Through the appropriate redevelopment, this area not previously accessi-

ble to the public, now has several functions: harmonization and connection between urban elements, artistic promotion and a place of memory. The executive project – drawn up by Luigi Boso and Michel Gaier – has given birth to a vertical connection through a porphyry staircase delimited by corten steel elements and the creation of a memorial garden dedicated to his biography and his works “At the top of the stairway is a lookout, which is inserted

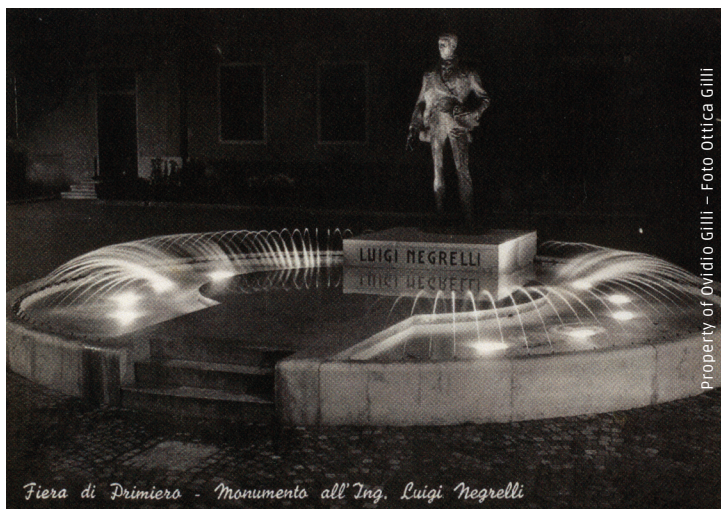
into the existing walkway in porphyry by Rivetta Koch with a cantilevered slab and glass balustrade. The green areas of the terraces are suitable as exhibition areas for artistic works of figurative sculpture.

EVENTS SURROUNDING THE SCULPTURE DEDICATED TO LUIGI NEGRELLI

As Filippi Gilli tells us in his book *La Fiera, a Town and its History*, **the bronze sculpture dedicated to Luigi Negrelli, by Er-aldo Fozzer**, had been placed at the top of a monumental fountain in the Town Hall's square in the late fifties (1958). A few years later, restoration work of the Town Hall, leads to a new layout of the square and therefore to a

relocation of the statue within the square. The fountain in question is

destroyed but the original layout is still visible in a postcard from that time.



A sarcastic dialect composition by Giovanni Meneguz entitled “Negrelli's Le Proteste” refers to these events: the author ima-

gines that he is standing in front of the statue that comes to life addressing him, complaining about the removal of the foun-

tain and the consequent displacement:

[...]

*Ma ades par sparagnar quattro palanche
la fontana i la ha ridotta a 'n brolo
e ghe manca sol doi o trei banche.
Scrivi che mi son sempre l'inzeegner
Negrelli, famoso, ma par el Canal
E non par esser stat en giardinier!*

[...]

[...]

Now, to save money, the fountain has been reduced to a garden which is missing only two or three benches. You write that I am always the engineer Negrelli, famous for the Canal and not for being a gardener

[...]

In recent years, the statue has found a place in the current Piazzetta Negrelli, the so-called Welsperg *brolo*, site of the ancient walled garden owned by the homonymous family.

Today a new garden welcomes him. This time, however, we have a space entirely dedicated to him, next to his birthplace that he never failed to visit despite the continual wandering throughout Europe. Even **his much loved Suez Canal is close to him metaphorically represented by the spectacular staircase**, here linking the lower and upper parts. Once at the top, we are near the Piazzetta del Dazio, which we can rightly consider the historical-artistic heart of the entire valley.



THE NEGRELLI MUSEUM

The Palazzo delle Miniere is today, the **main Museum in Primiero.** Having been in the past the ancient seat of the mining judge, the so-called *Bergrichter*, contains interesting testimonies about the world of mines. It also houses an

ethnographic section dedicated to material culture, the **prestigious collection a Never-ending Story; from the Meteorites to the Dinosaurs ... to Man,** donated to the community by the Research Center “Ligabue”, and the **Negrelli museum**, a heterogene-

ous collection of materials related to the famous engineer, such as for example photos, prints, family correspondence, maps and various publications. The Palazzo delle Miniere is also home to temporary exhibitions, conferences and concerts.



BIRTHPLACE

As already pointed out in the Guide to the villages - belonging to the same series Primiero in pocket - the building is visible to us in its nineteenth-century structure

even though it was already present in the sixteenth century. Formerly the seat of two confraternities, it **was acquired by the family after the second marriage between Nicolò**

Negrelli, father of Angelo Michele a timber merchant in Valstagna, **and the widow Anna Ceccato, who runs an inn here** (owned by her first husband) since the eighteenth century).

MOLARÉN: THE NEGRELLI'S LAND HOLDINGS

The walk then continues along the new Via Marconi towards Molarén, in the direction of Mezzano. It can be reached on a pleasant, pedestrianised stretch of road. From the Memoirs of Angelo Michele we know with certainty that **an important part of the family's various estates was located right in this area**. Browsing through more than nine hundred and fifty

pages of the long autobiography, the expressions "*la mia Bettina*" (my wife Elisabetta) and "*my Molarén*" occur several times, with heartfelt affection. This leads us to understand the importance of this project in the thoughts of Angelo Michele, who writes: "*Finding myself with some extra funds, I allowed myself to be persuaded to secure some capital with a mortgage and to address my*

thoughts on the entire purchase of Molarén, which in addition to the old portion of the house was owned by another 15 individuals". The unification of as many as 16 different properties reveals the extent of its size. Unfortunately, Angelo Michele's dream of transferring there with his whole family is not fulfilled, because of his arrest in Pallanza and subsequent financial collapse.



LA FAMIGLIA NEGRELLI



It certainly cannot be said that the Negrelli family was an ordinary family. Several prominent personalities are part of it: not only Luigi, in fact, the other members of the family also play an important role in events of the time, often being part of history.

In reconstructing the personal vicissitudes, helpful were the genealogical tree of the Negrelli family and the *Giornale della Famiglia Negrelli* of Primiero, in which Michele Angelo - by his father's example and right from his death - kept a journal for the benefit of the family.

Here we find in addition to entries and exits, personal annotations and updates on local and international news stories duly noted in chronological order. The choice to represent the entire "posing" family is something purely ideal as there is not any actual photographic document of this

type. The faces depicted, in this sense coincide with those of which we have found traces, whether they are true depictions or posthumous, as in the case of Giuseppina.

THE FOUNDERS

ELISABETTA WÜRTEMBERG

Elizabeth Wurtemberg is the beloved "**Bettina**" with whom Angelo Michele shares 64 years of marriage. Upon her death at the age of 88, followed by her husband's only a few days later. As written by her son Michele Angelo, as an epilogue to the memories of his father: "*These two blessed bodies*

lie to the right of the side door of the Parish, under white stone comforted by the cry of the poor, and the affection of their children. It was their will: that the church which they did not



abandon alive, they wanted nearby in death". The place mentioned by the son probably had to coincide with the place of the family tomb. Today only a plaque remains on the wall to the right of the Gothic side portal to the south-east, it refers to the burial of Luigi Negrelli's grandmother, Anna Ceccato.

ANGELO MICHELE NEGRELLI

Angelo Michele is to be recognised with the merit of being a **self-made man**: the ability to have created a huge land patrimony from nothing and to have distinguished himself to the point of holding administrative positions, assist his children maximize their possibilities and having known how to weave a dense network of relationships at a social level are the strong points to his rise. **Loyalty to the house of Austria** during the turbulent Napoleonic period will **cost him imprisonment, in addition to financial instability**. Already a protagonist in the war between the Bavarians and the French (1809), his political convictions will then cause his

subsequent **arrest (1813) - first in Milan and then in Pallanza, an island on Lake Maggiore** - by the pro-French administration of southern Tyrol now part of the Italian Kingdom (1809, peace of Schonbrunn between Austria and France and the Treaty of Paris between Napoleon and Bavaria). Such events constitute a **watershed moment, a before and after in his personal story**: the rapid economic and social ascent, with a leading role among the notable locals and a conspicuous land patrimony, are followed by a slow but inexorable withdrawal from the scenes and economic and physical decline. But the latter part of his life also reserves some satisfac-

tion. Memorable the meeting of Angelo Michele with the famous **Marshal Radetzky**, in the residence of his son Luigi (of who he is a friend to the point of being the godfather to two of the children born out of marriage to Lotti). His words are of emotion and pride: "*Entering, I was caught with two others in the same room, the acclaimed hero rose from sitting and came graciously to meet me and, taking both of my hands in his. He told me 'it's a pleasure to get to know you'. {.. / He ordered me to sit in front of him, and my wife sat with the marshal's wife. We entered into various conversations with each other...*"

SONS

In addition to Luigi, the first male and sixth of eleven children, several other members of the family have also been able to distinguish themselves for their knowledgeable skills in the most varied fields or for their work

MICHELE ANGELO

Michele Angelo is a **Doctor of law** and follows a legal career. He became judge of the District of Primiero and of Mori, many times Podestà (chief magistrate) of Fiera di Primiero, Provincial Councilor, but also a **member of the Supreme State Court**. He does not marry and has no descendants. On the death of his father, which happened just a few days after that of his mother's, he assumed a leading role for the whole family. "*They left (the parents) the family without leadership and therefore, following their holy and latest recommendations and the thought of all the relatives, I immediately placed myself as head of the family and, in my name and in the name of my brothers Luigi and Don Nicolò Negrelli, I began to direct it*". And he adds: "*The internal and external decisions are placed absolutely on the head of the family*", obviously represented by him-

self. **His personal story is intertwined with the affairs of his nephew -Don Antonio Zanghellini involved in the so-called facts of Fedai.**

The story with uncertain contours has negatively involved the whole family in his opinion and in particular he, as a judge: "*The fact of Fedai created commotion and fear, it happened on the night of November 17th (1853). Through the confession of two strangers, the curate of Mezzano was called, at midnight they showed him a dying man, he was given the sacrament of the last anointing and shortly thereafter died. His companions took him with them and nothing further was ever heard of him despite a thousand investigations*". December 15th a commission from Trento arrived (..). the rep-

utation of the curate Don Zanghellini, mine, and that of my whole family was seriously compromised. And he feels "*the second victim of the facts of Fedai*" in that he is transferred to Mori and must abandon Primiero. He returned only in 1870: "*On 26th July ended my exile [...] requested and obtained the pension [...] justice was done. I got the golden cross of merit and the title of Provincial Councilor of Contradictions!*" .

DON NICOLA

Professor at the Oriental Language Academy in Vienna, he is the Pope's secret waiter, Emperor Ferdinand's librarian, Delegate of the Innsbruck Diet, and the Vienna Parliament and Chaplain at the Imperial Court of Vienna. In addi-



Da sinistra: Michele, Luigi, Nicola, Francesco

tion to this, a refined writer and poet. From the aforementioned family journal it shows his close relationship with Primiero and the family of origin, which led him to visit the beloved valley whenever possible despite his constant travels all around Europe: "Don Nicola on his travels wrote from Berlin, Copenhagen, Hamburg, Aachen, · now goes to Paris [...] Don Nicola was in Paris, he enjoyed himself and, after a month,



he returned to Prague".

It also appears that he spent his time advocating the cause for the **Schenër road**: "Don Nicola left for Innsbruck as a delegate to the Diet. He obtained a gift from the province, by the Schener road, of (florins) 20 thousand "and again:" on 14 (March 1878) Don Nicola obtained the support of the parliament of Vienna for the construction of the military road up to Pontet".

FRANCESCO

Forest engineer at the service of the Austrian empire first and then for the Italian government. He **married Giuseppina Nauss from Bregenz, daughter of Joseph Anton**, an illustrious colleague of Negrelli. From the marriage Elisabetta Negrelli, mother of Ottone Brentari, famous Italian geographer, historian, journalist and politician, will be born. Among his numerous publications, the historical-alpine Guide of Belluno, Feltre, Primiero, Agordo and Zoldo published in 1887.

PIETRO

Born and died in 1805

DAUGHTERS

There is then substantial silence on most of the daughters, who according to the customs of that era are not given access to education so as, to build a "position". The only form of social advancement at the time is given by "matrimonial politics": In fact some of them married influential figures.

TERESA

Of her we only know that she remains unmarried.

ANNA

Marries the doctor Zanghellini and is the mother of Don Antonio Zanghellini. She is the manageress of the Feltre Orphanage.

ROSA

Marries the noble Giorgio Piazza of Imèr, but they have no heirs. Her brother Michele Angelo gives her the important role upon the death of their parents, to substitute the deceased mother, as well as direct

administrator of the family assets: " Sister Rosa Negrelli Piazza will act as mother, as I those of father. Overseeing needs, maintenance, clothing, agriculture, will guard and be responsible for all the keys"

COSTANZA

She marries the noble Pietro Paolo Piazza, son of Giorgio Piazza from a previous marriage, thus becoming the daughter-in-law of her sister Rosa

CATERINA

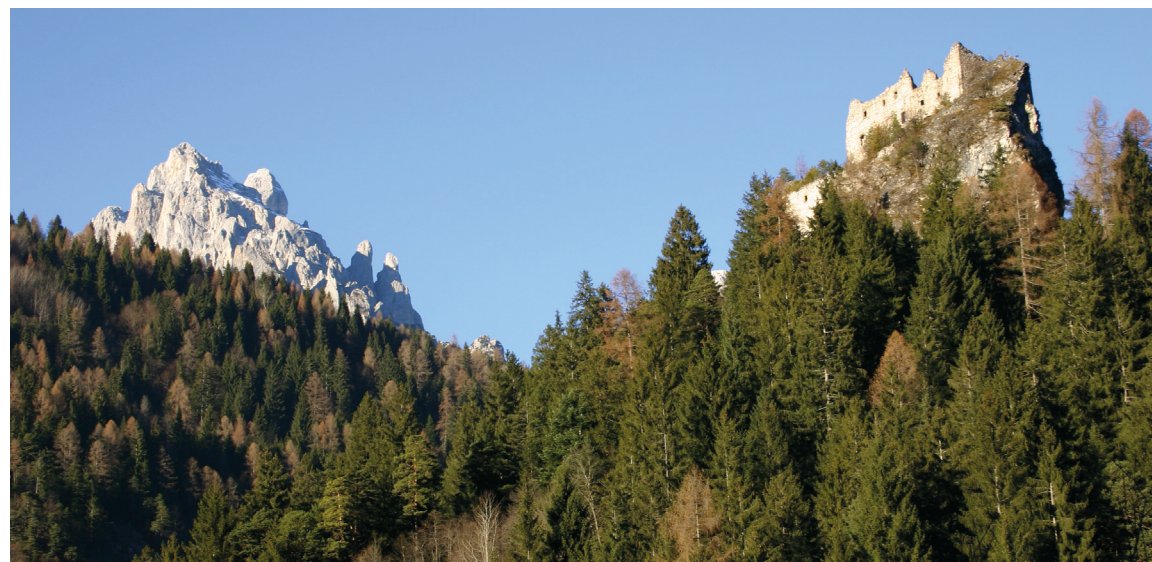
Marries Domenico Loss and is the mother of Giuseppe, a district captain, botanist, geologist and poet who writes esteemed books on Trentino.

GIUSEPPINA

Marries the landowner Antonio de Zorzi. The commemorative plaque, affixed by the *Schützenkompanie Giuseppina Negrelli Primor* on her childhood

home and place of birth, recalls the role in the military actions on the Habsburg front against the French invasion of the Kingdom of Bavaria, of which Primiero was part of, at the time. In 2009 the Austrian Republic coined a commemorative coin, in which she is portrayed next to **Andreas Hofer**. Giuseppina is undoubtedly the daughter to whom Angelo Michele is most close to, so much so that he affectionately names her over and over

again in his writings with the nickname *Beppi*. 'Her godfather of baptism is among the most illustrious: the Count **Giuseppe Welsperg**, lord of Primiero.



A SERIES OF DISTINGUISHED GODPARENTS

The Presence of other prominent figures in the cultural, political and economic landscape of the valley as godparents, gives us the idea of the social relations of which the family is entwined, both in the case of the forefather Angelo Michele – whose godfather is Giorgio Altamer – and as is for his children: among the baptism

certificates we find members of the Piazza and Weiss family, the archpriest of Primiero Cristoforo de Carneri – a Tyrolean nobleman originally from Welsperg (Monguelfo) – Signora Angela Sartori (born Scopoli) the noblewoman Felicita wife of Carlo Gilli and so on.

TIMELINE OF EVENTS



Birth of Luigi Negrelli in Primiero

1799

Gymnasium studies in Feltre

1813
1818

Practicum and exams support in Innsbruck

1819
1820

Hired as adjunct engineer at the Vorarlberg circular office and transfer to Bregenz

1826

Qualifies as inspector of road and hydraulic constructions in the canton of San Gallo

1832
1835

Qualifies as chief engineer of the Commercial Directorate in Zurich

1835

Study trip to England, France and Belgium

1836

Return to his homeland, in Vienna, for a post as Inspector General of the North

1840

Transfer to Verona, as responsible for the senior management of public works in Lombardy and Venetian region

1849

Transfer to Vienna, appointed ministerial adviser and Inspector General of the Austrian railways. The International Commission approves Negrelli's project for the Suez Canal

1855

Luigi Negrelli dies in Vienna

1858

1796
1797

First and second French occupation of Trentino and subsequent Austrian occupation

1801
1805

Tyrolese revolt against the Franco-Bavarians led by Andreas Hofer and then repressed

Treaty of Paris: Bavaria ceded Trentino to Napoleon, who annexed it to the Kingdom of Italy under the name of Department of South Tyrol. Primiero becomes part of the Department of Piave, with Belluno as the capital

Third French occupation and subsequent Austrian occupation, Peace of Presburg: annexation of the Trentino territory to the Kingdom of Bavaria

1813
1815

Austrian troops enter Trento

Trentino becomes part of the princely county of Tyrol



1848

Insurrectionary movements in Vienna, Venice and Milan



RECOMMENDED READING...

For further information on Negrelli, see the writings of **Andrea Leonardi**: Luigi Negrelli ingegnere e il canale di Suez (Luigi Negrelli engineer and the Suez Canal), as well as the article by Luigi Negrelli dalla Mitteleuropa a Suez, published in the periodical of information, politics and culture of the University of Trento. Also useful is the monograph by **Zara Olivia Algardi** Luigi Negrelli, l'Europa, il Canale di Suez and the volume by **Tindaro Gatani**, Luigi Negrelli, ingegnere Trentino ed europeo. To better under-

stand Negrelli's personality, his autobiographical work, Luigi Negrelli Un anno di vita. Tagebuch auf das Jahr 1831 – Diario dell'anno 1831, curated by **Maria Beatrice Marzani Prosser** is recommended. On the Primiero community website (www.primiero.tn.it) you will find information on his life and career and the opportunity to consult the Nachlass Negrelli (negrelli.primiero.tn.it). At www.gianangelopistoia.eu there is an article entirely dedicated to the editions of the International Negrelli Award.

Finally, to investigate aspects relating to the family of Luigi Negrelli the following are fundamental: the Memorie di Angelo Michele Negrelli by **Ugo Pistoia**, the Giornale della famiglia Negrelli di Primiero curated by **Gianfranco Bettega**. (Workbook No. 2, available at the public Intercommunal library of Primiero) and Quel che, per tutto il corso di sua lunga vita. Scene dalle memorie di Michele Angelo, with a preface by **Quinto Antonelli** and illustrations by **Jimi Trotter**.

THE COLLECTION “PRIMIERO IN TASCA”

This guide is part of the “Primiero in tasca” series: dedicated to Luigi Negrelli,

is a journey to discover his persona and large family. The initiative is promoted

by the Departments of Culture and Tourism of the municipality of Primiero San Martino di Castrozza and aims to disclose the most varied topics in an easy and light way. Booklets can be found in all local tourist offices and municipal museums. Available Guida ai paesi, the Guida ai dintorni and the Guida per giovani esploratori while a fourth booklet dedicated to contemporary art is in the process of being published.





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