

POLYTECHNIC OF TORINO
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Alpine railways of the Kingdom of Sardinia 1826 - 1861

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The present thesis aims to examine the political and territorial implications concerning the railway plan along the commercial route connecting Genoa with the Lake of Constance, "gate to the German world". It consists of a comparative analysis based on a large amount of documents originally kept at the Ministero dei Lavori Pubblici del Regno di Sardegna (the Ministry for Public Works of the Kingdom of Sardinia), and now available at the *Archivio di Stato* of Turin and at the *Archivio di Stato* of Tessin Canton at Bellinzona, and on the unpublished documents available at the archive of Giovanni Antonio Carbonazzi – who was the inspector of the Royal Corps of Civil Engineers (1792-1873) and the first planner of the alpine railway of *Lukmanier Pass*. On the basis of new elements, this study determined this fundamental aspect of the railway strategy of the Savoia.



CARTE des CHEMINS DE FER dans le Nord et le Süd de l'EUROPE CENTRALE, et de leur jonction au moyen de la ligne PROJECTÉE par le LUCMANIER / ÜBERSICHTSKARTE der EISENBAHN = LINIEN im Norden u: Süden von MITTEL = EUROPA u: ihrer Verbindung durch die LUCMANIER = BAHN. (1846) The railway line of the Luckmanier Pass planned by the engineers Giovanni Antonio Carbonazzi and Riccardo La Nicca. On the map the railway plan from Locarno to Rorschach and Wallenstadt is highlighted.

Even though the issue regarding the railway connection of the Piedmontese region with Savoy and France played an important role in the political strategy adopted by the Earl of Cavour during the 1850s, it was understated during the years of debate and preparation of the Sardinian railway policy (that is during the 1830s and 1840s). Afterwards, the literary works focusing on this subject were greatly influenced by and mainly concentrated on the Fréjus railway tunnel, which is still considered an impressive work on the engineering plane.

One should remember that it was during the reign of Carlo Alberto (1830-1849), that,

- urged by the first Austrian and French realisations (apt to improve the competitive harbours of Trieste and Marseille), they felt the impelling necessity to provide the "continental states" of the Sardinian Kingdom with an updated system of infrastructure;

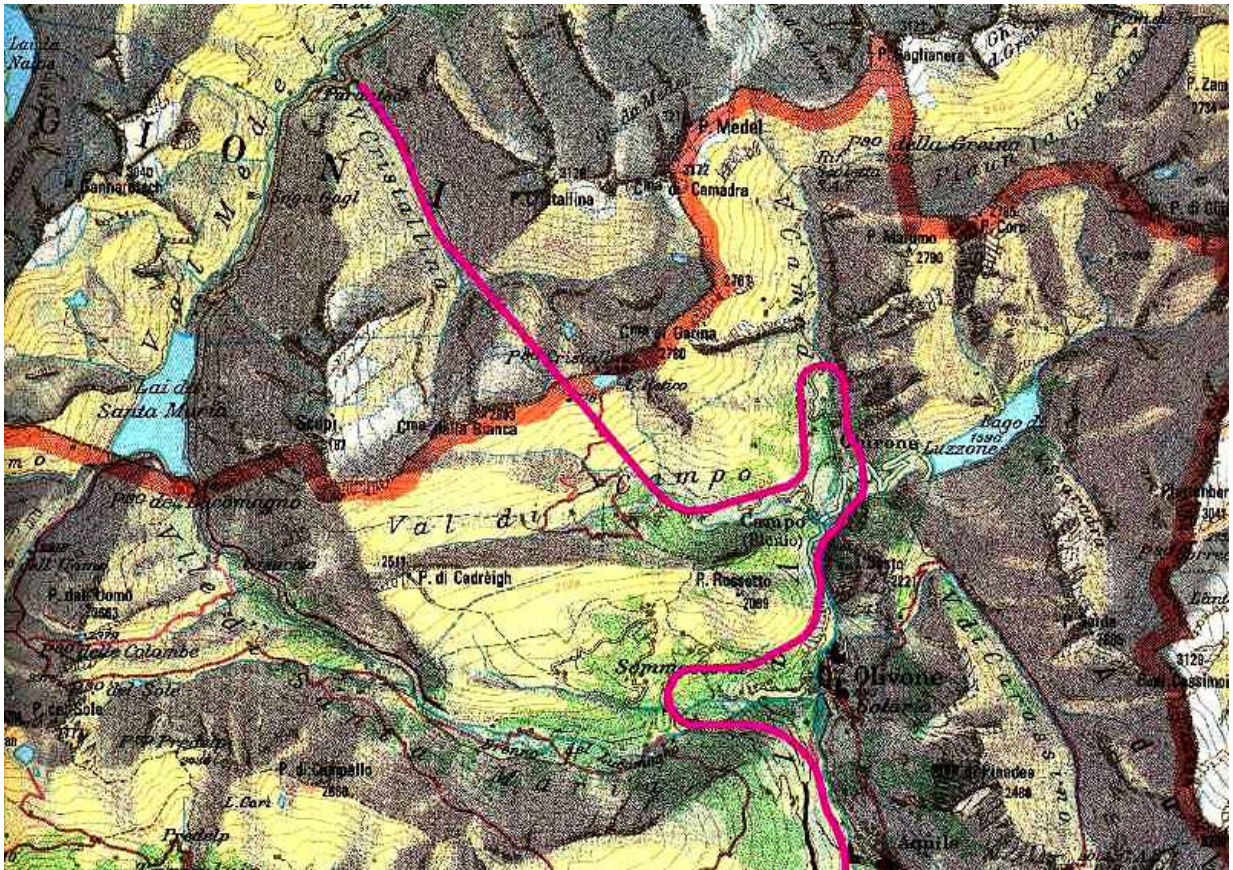
- the problem regarding the promotion of trade from Genoa to the Swiss and German markets - already actively pursued by the Government of Vittorio Emanuele I (1802-1821) through the construction of a carriageable road over the *Sankt Bernhardin Pass* - became a topical subject.

- the Sardinian ruling class became aware of the political advantages that could derive from a preferential relation with the German States, which, in those years, were getting organised in the *Zollverein* presided by the Kingdom of Prussia.

It was a ten-year debate, involving all the most prominent personalities within the State, and ending with the resolution (1844) to carry out a railway network linking the harbour of Genoa with Turin and Arona. From there it was possible to reach Southern Germany through the steam navigation on the Lago Maggiore and the alpine carriageable roads over *Sankt Gotthard* and *Sankt Bernhardin* Passes. At that point, the government understood the political and strategic importance of this second railway line and clearly showed preference for the Genoa-Alessandria-Arona route, deciding for the construction of the relevant railway network one year later – rather than authorising the Turin-Milan and Genoa-Milan lines, on several occasions requested by the Genoese commercial groups.

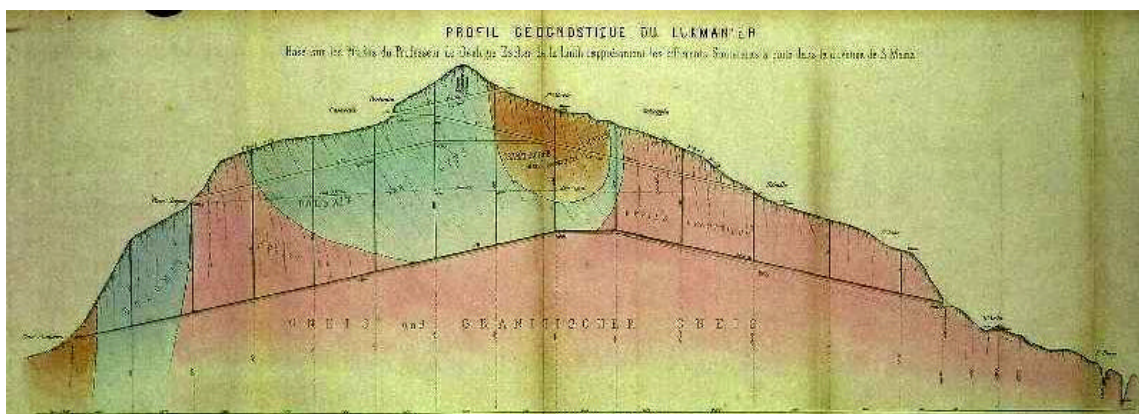
In 1845 the Sardinian government entered into negotiation with the cantonal governments of *Tessin*, *Graubünden* and *Sankt Gallen* for the railway extension from Genoa to the Lago Maggiore in the Swiss territory. It was the so-called "Great Italian German Junction Railway" over the *Lukmanier Pass*, located between the Lago maggiore and the Lake of Constance – the latter was supposedly the final destination of the planned railway.

The analysis of the pioneer project regarding the railway over the *Lukmanier Pass* demonstrated the importance of Piedmontese engineering, including it among the most important European centres of technological innovation.



The project of Giovanni Antonio Carbonazzi for the Lukmanier-Cristallina Pass (1846); section including the route between Acqua Rossa in val di Blenio and Pardatsch in val Medel. From: *Piano alla scala di 1:20000, ridotto da quello alla scala di 1: 5000 / stato rilevato nella state 1846. per servire alla formazione del progetto / di variante, a quello stato presentato nel 1845, nel passo dei monti / colla strada ferrata che dal Lago Maggiore tende a quello di Costanza.*

In the 1850s the Genoa-Arona-Constance route was deprived of its political importance and, subsequently, lost its potential profitability. This was the reason why the Government was not interested in promoting the relevant line (in opposition to what had happened with the Frejus project). At the end of the Italian unification process, the *Lukmanier* hypothesis was replaced by the railway project of *Sankt Gotthard*, more consonant with the Milanese interests.



PROFIL GÉOGNOSTIQUE DU LUKMANIER / Basé sur les études du Professeur de Géologie Escher de la Linth représentant les différents Souterrains à puits dans la direction de S. Maria, in Passage des Alpes. Chemin de fer de Coire à Bellinzona par le Lukmanier. Plans et profils en long. Etudes et projets par La Nicca. Echelles pour le plans 1:50.000 et 10.000 pour les profils, Torino, Autolitografia L. Rolla, s.d., tav III. Geological analysis of the Lukmanier massif realised by the famous professor escher von der linth.

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