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# Carlo Cattaneo *“Universal Mind”*

Essays by Sergio Romano, Franco Masoni and Pier Carlo Della Ferrera





# IL POLITECNICO

REPERTORIO MENSILE

DI

## STUDI APPLICATI

ALLA



PROSPERITÀ E CULTURA SOCIALE



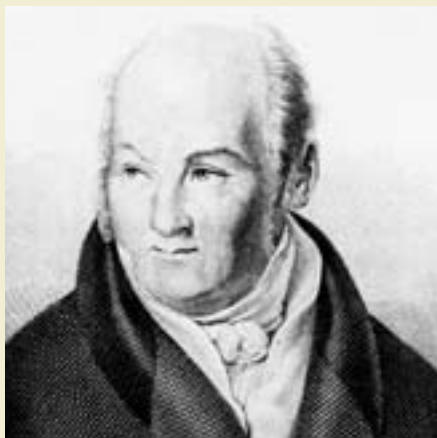
MILANO

PRESSO LUIGI DI GIACOMO PIOLA

MDCCCXXXIX.



Carlo Cattaneo was born in Milan on 15 June 1801, the son of Melchiorre, who owned a small goldsmith's shop, and Maria Antonia San Giorgio. The second of six children, the family's limited financial possibilities meant that he had to attend seminaries at Arlenico, Monza and Milan - where he took courses in literature, logic and metaphysics - before he abandoned his religious studies and enrolled at the S. Alessandro grammar school in Milan. Here, from 1818 to 1819, he took examinations in religious instruction, universal history, mathematics, experimental physical mathematics and theoretical and practical philosophy. The following year, he completed his secondary studies at the grammar school



at Porta Nuova, where he further enhanced his already vast and eclectic knowledge with studies in the fields of Latin literature, natural history, and technology.

He then enrolled at the Faculty of Jurisprudence at the University of Pavia, but never attended its courses. The death of his father, which worsened the family's already difficult economic situation, forced him, in fact, to look for work. Having obtained the post of grammar teacher at the local grammar school at Santa Marta, Cattaneo took up studying law privately, attending the law school held then in Milan by Gian Domenico Romagnosi, the best known lawyer of the time. Romagnosi played a fundamental part in Cattaneo's intellectual and personal development and their relationship gradually grew into one almost of father and son. Once Romagnosi's school closed, Cattaneo continued his university studies on his own and was awarded his degree in law on 19 August 1824. It was in these years that Cattaneo came into contact with some of the most prestigious Italian cultural circles of the time: the “Con-

ciliatore” in Milan and the Florentine group of Giovan Pietro Vieusseux, in whose “Antologia”, in August 1822, Cattaneo's first article was published, a review of Romagnosi's work, *Assunto primo della scienza del diritto naturale*. Still in this same period, Cattaneo came to know some influential men of politics from the Canton of Ticino, particularly Stefano Franscini, with whom he collaborated in translating into Italian, *Istoria della Svizzera pel popolo svizzero* by Heinrich Zschokke, published in Lugano in 1829-1830.

In parallel with his professional activity - which, apart from teaching, involved him in the translation and revision of scholastic texts on Geography and History from the original German - Cattaneo dedicated his time to publishing articles and essays; starting from 1835 he became a regular contributor to the “Annali universali di statistica”, a newspaper for which he wrote articles on agronomy, business, finance and linguistics. The second half of the eighteen-thirties marked a crucial point in Cattaneo's personal and intellectual life. In November 1835, he married Anna Payne Woodcock, an English noblewoman of Irish origin, whom he had met approximately ten years earlier and who was a faithful partner to him throughout his life. In the same year, he gave up teaching and devoted himself with ever increasing commitment and energy to freelance journalism. He started to take an interest in the question of railways - his first essay on the subject appeared in June 1836 under the title *Ricerche sul progetto di una strada di ferro da Milano a Venezia* - wishing to raise in his readers not only a purely technical interest, but also an awareness of the importance of technological achievements in the economic and social development of a country.

This joint and integral vision of technical problems and social questions formed the basis of “Il Politecnico”, the famous “monthly journal of research applied to prosperity and social culture”, which, initiated by Cattaneo in 1839, was to become a milestone and essential point of reference for the more enterprising exponents of positivist and progressive culture in Lombardy. Open to a broad range of interests, the periodical published articles by Cattaneo on economics, demographics, geography and geology, histo-

Previous page:

**Carlo Cattaneo**  
in a watercolour  
by Giuseppe Frascina,  
a colleague of his  
at the Liceo Cantonale  
in Lugano.  
The portrait was  
inserted into a copy of  
*Dell'Insurrezione di  
Milano nel 1848 e della  
successiva guerra.*  
*Memorie di Carlo  
Cattaneo,*  
Lugano, Tipografia della  
Svizzera Italiana, 1849  
(Lugano, Biblioteca  
Cantonale)

Above:

**Giandomenico  
Romagnosi.**  
From a drawing by  
Ernesta Legnani Bisi  
(Milan, Civica Raccolta  
A. Bertarelli)

Left:

**Cover of the third  
issue of  
“Il Politecnico”, 1839**  
(Lugano, Archivio  
Storico della Città, Casa  
Cattaneo)

ry, literature, philosophy, architecture, and town planning.

Between 1840 and 1843, after presenting a prison reform project developed on mandate of the Lombard-Veneto government, Cattaneo took an active part in the international



debate on the question of penitentiaries. Through interventions made at conferences and conventions as well as the pages of the "Politecnico" - in which he published the collection *Di varie opere sulla riforma delle carceri* at the beginning of 1841 - he expressed himself favourable to the continuous segregation of convicts, supporting the so-called Philadelphian system.

By now numbered among the spearhead exponents of Milanese culture, he was awarded a prestigious appointment in 1843 as member of the Lombard Institute of Sciences, Letters and Arts. In 1844 he was called upon to take part in the Commission for the VI Congress of Scientists, which was held in the Lombard capital that year, and in the early months of 1845 he took on the office - certainly no less important than those mentioned above - of Spokesman for the Società di Incoraggiamento d'Arti e Mestieri di Milano. For three years he dedicated himself totally and intensively every day to this institution; Cattaneo saw in the SIAM «an ideal continuation of the work carried out for the 'Politecnico', also because of the presence of many scientists and technicians who had joined him in contributing to the first series of the journal», which had ceased publication at the beginning of 1845.

It was in these years, in 1844, that one of Cattaneo's most significant works, *Notizie naturali e civili su la Lombardia* saw the light of day, building on a concept arising from the initiatives taken for the above mentioned congress of scientists.

Shortly after this, his wide-ranging essay, *Sull'ulteriore sviluppo del pubblico insegnamento in Lombardia* appeared, which was a well constructed project on scholastic reform, drawn up in 1848 on behalf of the Istituto Lombardo di Scienze e Lettere. The content of the paper, which was inspired by progressive and democratic principles, in clear contrast with the rigid, reactionary system of the Habsburg regime, caused the Austrian police to regard it with suspicion and mistrust. More generally, what contributed to putting him in a bad light in the eyes of the Imperial Royal government, were the efforts he made to create an awareness of their rights in the minds of the citizens, as well as the expression of his ideas on the gradual winning of political, social and civil reform, as a prelude to the achieving of independence by Lombardy-Veneto within the framework of a federal state.

Thus, during the Five Days of Milan in March 1848, after an earlier attitude of prudence and caution, Cattaneo allowed himself to become almost spontaneously involved in the events, until finally he fulfilled the role of a veritable leader, the charismatic and natural inspiration of the Council of War called upon to organize the revolt. However, his democratic and republican leanings conflicted with the views of the provisional Government, which reflected those of the conservative and monarchic Milanese aristocracy, leading them to accept the help of the House of Savoia. Forced to flee by the return of the Radetzky troops to the city, after a short stay in Lugano, Cattaneo departed on 8 August for Paris; he returned to the banks of the Ceresio in November of the same year, 1848, settling there permanently in his house at Castagnola, where he lived for the rest of his life. Returning to his work as writer and historian, he published two works which constitute basic sources for the history of the 1848 revolution in Italy. He waited first for the draft of *Dell'insurrezione di Milano nel 1848 e della successiva guerra*, the Italian edition of a volume already published in

Frontispiece of *Ricerche economiche sulle interdizioni imposte dalla legge civile agli Israeliti*, Milan, De Cristoforis, 1836.

The first essay of note by Cattaneo, in which he made a stand against the Law's severe prescriptions concerning Jews.

It was blocked by the censors and came out in 1837 after the removal of one chapter.

French in Paris and then collected unpublished materials and documents in his *Archivio triennale delle cose d'Italia dall'avvenimento di Pio IX all'abbandono di Venezia*, which was published between 1850 and 1855 by the Tipografia Elvetica. The proprietor of

held the first of the lessons that were reproduced in the philosophical essay, *La psicologia delle menti associate*, which was completed in 1866.

After the success of the expedition of the Thousand, he joined Giuseppe Garibaldi in



the printing shop, Alessandro Repetti, also a political refugee, became a close friend. From 1852 onwards, he also returned to teaching. He was appointed Head of Philosophy at the Canton Grammar School of Lugano and remained there until 1865, when he resigned in response to the harsh criticisms made of him by his adversaries in moderate and traditionalist circles. At this time, he took up appointments and offices with the government of Ticino: in 1852 he drew up a memorandum for the reform of teaching in the Canton secondary school; between 1851 and 1853 he developed plans for the reclamation of the Magadino plain.

Towards the end of 1858 he re-exhumed "Il Politecnico", through which he continued to express his total faith in technical-scientific progress as a means of achieving man's material and moral improvement. He edited the journal until 1863 and was a contributor until 1865.

However, Cattaneo, still opposed to the Savoy monarchy solution, continued from Lugano to watch developments in the Italian political arena. In 1859, while supporting the war, he held tenaciously to his ideas and did not want to take part in the new order; he returned to Milan on 25 August solely for reasons connected to his scientific activities. At the Lombard Institute of Sciences and Letters, he

Naples, but left when he realized that it was impossible to achieve a federalist-republican political system. His ideals made him very cautious about accepting official appointments in the ranks of the newly-born Italian nation. Elected Member of Parliament for Milan in 1860, he did not want to swear loyalty to the crown in contrast to his republican beliefs; elected again in 1867, he went to Florence, which in those years was the temporary capital, but he did not attend parliamentary sittings, so that he could avoid being formally sworn in.

In the Spring of 1867 he suffered a heart attack and in the Autumn of the following year, on the worsening of his health, he was forced to retire permanently from public service. During the night of 5-6 February 1869, at his home in Lugano, Carlo Cattaneo died.

The Rebel Committee at Taverna's house during the Five Days of Milan (Milan, Museo del Risorgimento)



## Two ways of remembering Cattaneo

*by Sergio Romano\**



Among the memoirs honouring Carlo Cattaneo that were published on the occasion of the second centenary of his birth, two seem to me to be of particular interest and originality. The first is clever and humorous, the second very topical.

The humorous memoir is by Arturo Colombo, who researched passages on Cattaneo in the *Note azzurre* by Carlo Dossi and had them published by Franco Sciardelli with a beautiful lithograph by Fabio Sironi. Dossi was not only one of the major writers of Lombard “Scapigliatura” and of the second Italian period of Romanticism, he was also a State functionary and was therefore a man of politics. He worked with Francesco Crispi in the years that the latter was Foreign Secretary, helped him reform the country’s diplomacy, and represented Italy in Colombia and Greece. His pages on Cattaneo are an anecdotal and literary “petite histoire” in the style of the *Note azzurre*, but they add some curious and interesting features to this portrait of the scholar. «In short, the ‘blue’ Cattaneo that we perceive through the brilliant snapshots given by Dossi’s accounts...», writes Colombo in his introductory essay, «is so unusual and unexpected because here - instead of the usual gruff, almost rough personality, ‘stubborn and sharp-edged’ (as Salvemini once said), there

economist, the article has now been published by Libri Scheiwiller in two languages, Italian and English, with a preface by Carlo G. Lacaita and an afterword by the editor. It is entitled *Del pensiero come principio d’economia pubblica* and, one hundred and forty years after it was first published, it is surprisingly topical.

The article is a small historical study on economic theories. Cattaneo observed that the major economists of the previous generations had studied the “physics of wealth” with inspired intuition, but had mainly ignored or neglected its “psychology”. Their books explored the role of nature, capital and labour, but did not attribute enough importance to what Cattaneo defined as “thought”, a term the author of the excellent English translation (Ruggero Palma di Castiglione) has expressed with “intelligence”. “Thought” is man’s intellect; in other words, his capacity to perceive the value of a natural resource, to use it for new goods and instruments, to create new industries and multiply the beneficial effects of commercial exchanges. Capital is not only the mechanical accumulation of income produced by natural wealth (agricultural property, a flock of sheep, a mine, the fruits of the earth and the sea), it is above all the result of invention, initiatives, and the dis-



emerges an obstinate but affable, brilliant, sometimes even carefree personality».

The second memoir is the new edition of an article published by Carlo Cattaneo in the “Politecnico” of April-May 1861. Thanks to Marco Vitale, the brilliant and dynamic

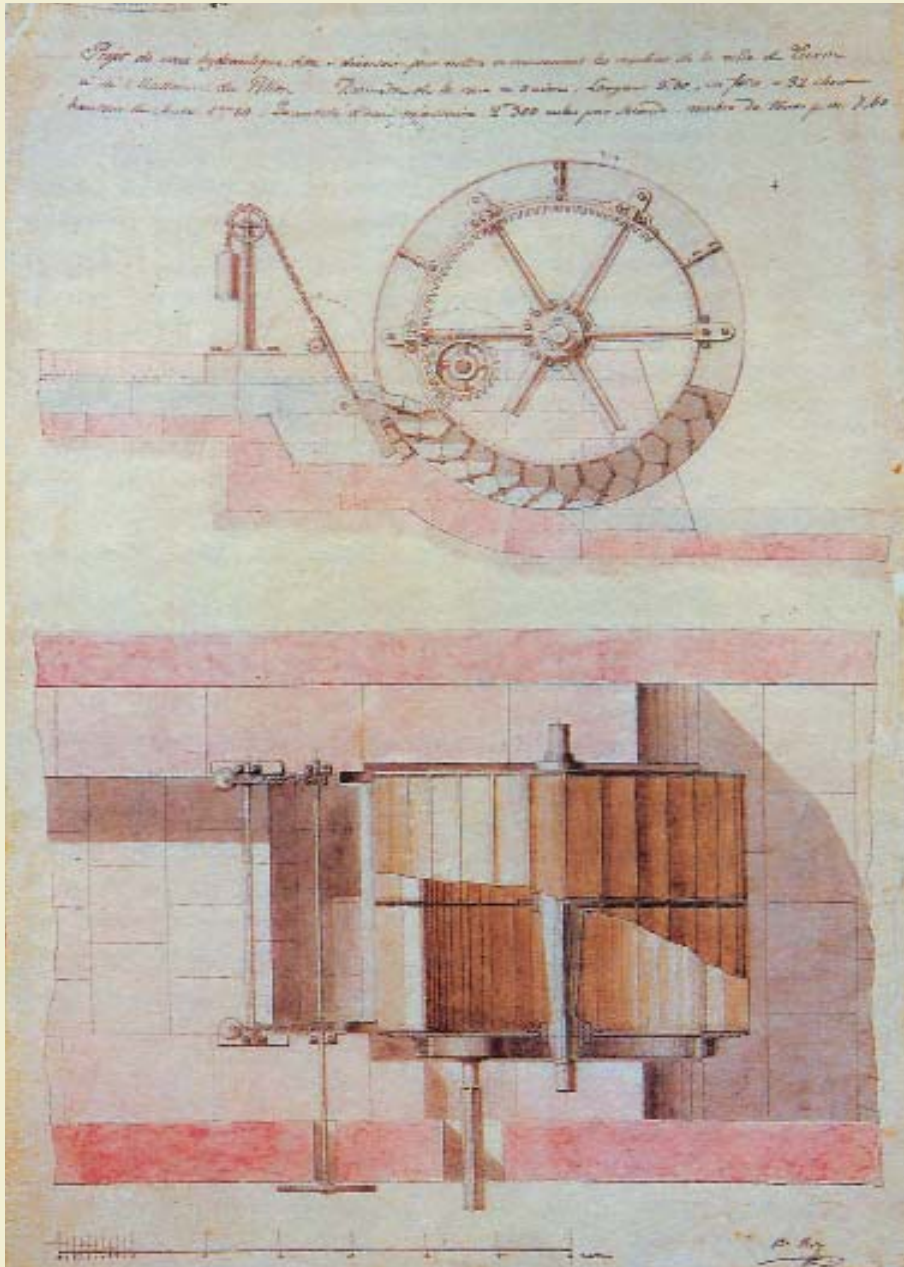
coveries of talented and enterprising people. «There is neither labour nor capital», wrote Cattaneo, «unless they start with an act of intelligence. Before any work or capital, when things are lying neglected and unknown in the midst of nature, it is intelli-

Luigi Steffani  
**The Plough**,  
 (Milan, Civica Galleria  
 d’Arte Moderna)



gence that starts the work and imprints upon them for the first time the character of wealth». The coal that is brought to the surface in China, and the oil that emerges from beneath the ground in Pennsylvania assume importance only when man realizes he can

they sustained that capital derived exclusively from the unequal distribution of natural wealth and maintained, in order to correct this inequality, that this should belong «to the whole of society, indeed, only to workers». Capital is born from science, genius,



make use of them. The current of a river becomes wealth only when someone discovers that he can use it to drive the paddles of a mill or the turbines of a power station. The world for centuries - and perhaps still now - has been full of riches that are both visible and unknown, known and neglected. It is “thought” that raises them from generalized indifference and makes them useful and precious. According to Cattaneo, then, the early Socialist theoreticians were wrong when

enterprise and, above all, from man’s freedom. «These are the rocks», wrote Cattaneo, «on which almost all socialist undertakings foundered. The founding fathers understood the principle of labour in all its strength, and to some extent, the principle of intelligence; but they did not appreciate the effectiveness of free labour, which, in other words, is the same thing as free will». “Thought” or “intelligence” is not only the intelligent and free initiative of individual

Plan of a mill wheel,  
1844  
(Turin, Archivio Storico  
della Città)



Pietro Ronzoni  
**Spinning mill near Bergamo**, ca. 1825  
 (Milan, Fondazione Cariplo)

entrepreneurs; it is also the “dominating thought” of a society at a particular stage of its evolution. In his preface, Lacaita recalls a *Prolusione* of 1852, in which Cattaneo spoke of «the vast moral combinations that unite millions of men in a powerful order of thought and free will». As soon as it becomes a political order and inspires laws, “dominating thought” can transform the economy and start new phases in human history. When he wrote his essay in the Spring of 1861, Cattaneo was thinking of the abolition of feudal bonds in France in August 1789, of the Irish reforms after the disastrous famine of 1848, the sale of ecclesiastical assets in Italy and, above all, of the freeing of the serfs in Russia. The great reforms of Alexander II were dated 3 March 1861 and the news reached him while he was working on his article. «No-one will ever doubt –he wrote– that the freeing of the serfs in Russia was not in order to miraculously activate labour and increase several times over the production of land and the trades».

Unfortunately, however, not only “good”

thoughts exist. Alongside the long-sightedness of the intelligent entrepreneur, is the egoism of those who want to monopolize natural resources and prevent their free exploitation. Alongside the good laws that encourage competition and the free circulation of goods, there are also bad laws that create blocks and obstacles. Alongside the good “dominating thought”, is one that overturns the natural tendencies of “economic” man. «Nature offers its goods in vain –wrote Cattaneo– when the will of men, in the form of self interest and arrogance, places a veto upon them. In order to enable a few of the privileged to sell the iron of Catalonia and Biscay at the price of gold, Spain prohibited the mining of iron in America. Not only were the profits of the ironworks lost, but the whole of agricultural and industrial production over immense areas were deprived of the instruments they needed, or had to pay for them at more than excessive prices».

Among the “dominant thoughts” that have had a great influence on the history of

humanity, there is one that never ceases to trigger off debate and polemics. This is the «theological idea» which came «into the fervid imagination of an Arab camel driver» and drove «a horde of shepherds» to «take possession of all the lands eastwards up to and beyond the Ganges and westwards beyond the Tagus». They believed that all the earth was God’s and belonged by right to the Faithful. And in the countries they conquered, therefore, they imposed an economy in which «the Infidel is destined to labour, the Faithful to enjoy». Since then, fortunately, Muslim attitudes to economics have changed. Some old prejudices still hold their own, however, and continue to exercise a bad influence over the economic policies of some of the Arab States. In his Afterword, Marco Vitali refers to an analysis by David S. Landes, the author of *The Wealth and Poverty of Nations*, according to whom «the great manna of oil [...] has intoxicated those in power, their functionaries and suppliers, who have slept on mountains of money, wasting it on projects that are often without meaning [...]».

Here, then, are some of the reasons why Carlo Cattaneo’s writing is still extraordi-

and vindicators of free intelligence and free will». Let us hope that someone in Rome will read these words written by Carlo Cattaneo.

*\* Ambassador, journalist and writer*



narily topical. This is particularly true of a country that in recent years has not given sufficient care to the education of its own young people, or to the research of its scientists. «If legislators are unable, by waving a magic wand, to create in all countries the goods that nature has too unequally spread over the earth; if they are unable to multiply at will the numbers of strong arms and the strength of labour; if they are not always able to win over the arbiters of capital; they are certainly able to become the promoters

Vincenzo Vela  
**Carlo Cattaneo.**  
Medallion  
(Lugano, Liceo Cantonale)



## Carlo Cattaneo and Italian Switzerland

*by Franco Masoni\**



Carlo Bossoli

**View of Lugano, Piazza Grande** (details), 1849  
(Lugano, Museo Civico di Belle Arti)

Italian Switzerland erupted into the life of Carlo Cattaneo as early as 1815, when the young Leventinese, Stefano Franscini (almost five years his senior), joined him at the Seminario Arcivescovile in Milan. Fellow students, they became close friends (as recalled by Cattaneo in his *Ricordo milanese di Stefano Franscini* of July 1857). Discarding their cassocks, Cattaneo in 1817, followed by Franscini a year later, both moved on, hungry for books and knowledge, to the Ambrosiana and the Library of the Museo Numismatico of Brera, where they discovered the premises, the shelves and the texts of the Lombard Enlightenment. It was like a miracle: their intelligent willpower overcame the erudite librarians, cousins of Cattaneo's. «In the Autumn of 1821», Cattaneo persuaded Franscini, «since the latter wished to see his native valley again», to accompany him to Zurich, where his brother was in business: for both of them, it was a sort of reverse Grand Tour. The classic Tour conducted young gentlemen and future businessmen from the strongest and most prosperous independent countries of northern Europe (France, the Netherlands, the United Kingdom, Sweden, Russia) around Italy, on an educational journey, during which they would discover the almost religious link between the beautiful and the good; the journey of the two young men from the foothills of the Alps, was on foot, from Lombardy to central Europe, as if to examine whether the happiness and well-being of the north-east of the Swiss plateau, dedicated to business, were legend or reality, or whether any inter-dependence existed between these and the more enlightened bourgeois freedom these regions enjoyed. The consequences were not slow in appearing: a few years later, the two devoured the *Istoria della Svizzera pel popolo Svizzero* by Enrico Zschokke, a book brought with them on their return from Cattaneo's brother; they were fascinated by it and decided to translate it. «I was enchanted by it and translated the first half into Italian», wrote Cattaneo, and, to no lesser extent, «it worked on the imagination» of Franscini, who translated the other half. A full immersion, then, for Cattaneo, into the beginnings of federalism and the

realization of incredible dreams within arm's reach of development in the more advanced regions of the ancient Helvetic League; for Franscini it brought pangs when thinking of the state of his Valley, but was also a promise to himself and great hopes. The effect of the journey and the liberal enthusiasm of Zschokke did not seem alien to Cattaneo's encouragement of his friend in those years to return to his home country on his true mission: «I often reminded him that in Milan he was superfluous, while in his own country he could be needed».

In 1824, Franscini left the Milan school for Bodio; his sister had died of consumption and he had to take care of his parents and his own health. He later admitted that he also aspired to represent the people in the Grand Council. In 1826 he was called to Lugano to direct a school of reciprocal teaching: working with him was his wife (a member of the Massari family of Milan, whose brother, a scholar, was the teacher and colleague of Cattaneo) and a sister of hers at a similar school nearby. Franscini taught, published scholastic texts, was Secretary of the Società ticinese d'utilità pubblica, founded in 1829-1830 by the liberal Abbot, Vincenzo D'Alberti. He was a frequent visitor at the Ruggia house, where the first Risorgimento printer's in Ticino was located. The patriot, Giuseppe Vanelli had founded it after he was hounded from the management of the "Gazzetta di Lugano" because he had followed democratic and anti-Habsburg lines disapproved of by the Lombard-Veneto police; he was joined by the pharmacist, Giuseppe Ruggia, another patriot who finally took it over. Together with Ruggia and several other courageous political radicals, Pietro Peri, Giacomo Luvini-Perseghini, Carlo Battaglini, Giovan Battista Pioda, Carlo Lavizzari and others, Franscini fought for liberal reform of the Canton Constitution, against the authoritarian regime of the regional functionaries. In two of his volumes printed in Zurich and distributed anonymously at the expense of friends all over the Canton Ticino, he reversed public opinion: the Grand Council adopted the reform in June, and the people followed on 4 July 1830. This was the

first “regenerated” constitution in Europe. Elected Secretary of State, Frascini collaborated with Ruggia's newspapers and undertook to reform the State and the public administration, to create the state schools that had been approved but never brought into being. In a Europe that was generally deprived of freedom and democracy, Switzerland was already by its nature an oasis; in Ticino the new, more liberal Constitution, its own freedom encouraging



Vincenzo Vela  
Stefano Frascini.  
Bust, 1860  
(Lugano, Liceo Cantonale)

that of others, made it possible for waves of refugees to flee here from each failed revolutionary uprising, especially from Italy, full of hope and ready to help Ticino stay free. Among the exiles of 1820/1830 were General de Meester and the brothers, Giacomo and Filippo Ciani, whose forebears were from Ticino. In Milan, they had dedicated themselves to the cause of “freedom or death” since the Habsburgs, though reminded in 1814 by Giacomo, together with Porro and Confalonieri, had reneged, strong in the rights of their victory, on their promise of constitutional guarantees to the Lombards. Implicated in the conspiracy of the Carbonari in 1821, which for others had meant imprisonment in the Spielberg, the two brothers were able to leave Milan first for Paris and then London, exiles with the flower of Italy's intelligent-

sia (Berchet, Santarosa, Gabriele Rossetti, Giannone, Porro, Arrivabene, Ugoni, Angeloni) at the cottage in Turnham Green belonging to Lady Heli Woodcock, the leader of the welcoming committee for Italian refugees, and the mother of Ann, who was to become Cattaneo's wife. The Cianis gave strength and funds, arms and support to the cause; (apart from Frascini's booklets) they provided substantial financial backing for the Ruggia printer's: when it ceased publishing, they took over some of the installations in order to create the “Tipografia della Svizzera Italiana” .

While Cattaneo - because of the lucidity and depth of his analyses, his multi-disciplinary interests, the breadth of his knowledge, his critical capacity - made even more acute by his perspicacity as a lawyer, the force of his arguments, and the strength of his intellect - gradually acquired great fame in Lombardy as a scholar, historian, philosopher, journalist, and advocate of the most modern ideas and causes, Frascini made his own way, encountering greater difficulties in these poor, harsh fields, though no less fertile for all that, as a writer, author of textbooks, a statesman and politician. His *La Svizzera Italiana*, a great work published in 1837, preceded *Le notizie naturali e civili su la Lombardia* published by Cattaneo in 1844, as if between the two men - or from a common source - there flowed an arcane spring. Cattaneo never lost his friend from sight and certainly followed the highs and lows of his political fortunes. They met again at Serocca d'Agno in 1829 at the villa of a mutual Ticino friend (a participant in the Piedmont uprising of 1821), Giuseppe Filippo Lepori, whom Cattaneo had known as a student in Milan and Pavia and introduced to Frascini: «the theme of their discussions –he would write– was the political reform of the Canton, which, it was believed, was prohibited then by the acts of the Congress of Vienna. Frascini was writing a pamphlet, I believe, at that time, which, by removing this false belief, opened the way to a new future for his country, to a large circle of political friends, and a career that no-one would have predicted for him in his youth». In 1834, Cattaneo published and supported in his “Annali”,

Franscini's *Appello per una generale sottoscrizione a favore delle scuole pubbliche del Cantone Ticino*: this followed the regression that threatened the gains made by the reform of 1830 and gave rise to the liberal revolution of 1839, which was not to be the last. Franscini certainly uncovered for Cattaneo the deep roots of the Ticino people's love of freedom: the ancient "*vallerane*" traditions (a more rugged form of the adjective that the regional Italian of Ticino preferred to the Italian term "*valligiano*") and those of the mountains, handed down in the Vicinie region from times immemorial; the habit, over three centuries of tough protectorate of sovereign Cantons, of discipline and self-discipline in governing the local statutory autonomy; the proud reserve shown by the Protestants of Locarno on leaving for exile; the space for spiritual freedom opened by the presence in Lugano of a School for Somascan Fathers and, even more by the printing works for the Milanese Agnelli, a hotbed of anti-Jesuit, then pro-Jansenist, pro-encyclopaedic and democratic publications that were not permitted or welcome in Milan. From this, then, in Lugano at the end of the eighteenth century, according to the news of the time, there bloomed at least five clubs that were not unfamiliar, in February 1798 (the invasion of the Cisalpini and young patriots of the city having been repelled by Lugano volunteers) with the proclamation of the Lugano citizens that they wished to be "free and Swiss": a freedom that some Sovereign Cantons welcomed and implemented the following month in the Helvetic Republic, imposed upon them by the French invaders. Opposed because of its centralism in Central Switzerland, the citizens of Lugano were divided: some clubs were in favour; strongly against, however, were the reactionaries and countrymen. The latter, the following year, on the approach of the Austro-Russian army of general Suvarov, invaded the city in huge mobs, looted the printworks which they blamed for the revolutionary contagion, killed the abbot, G.B. Vanelli who directed it, as well as two representatives of the new Republican authorities. But the ideas lived on: in 1815, a pronunciamento,, a true liberal revolution, rejected the illiberal constitution that had

been imposed upon them; a Federal intervention suppressed the uprising, but not the love of freedom that continued to inflame Giuseppe Vanelli, his newspaper, his printworks, then Ruggia, the Radicals,



Franscini, and the Reform of 1830.

These facts were well known to Cattaneo through his friends, his relationships, and an uninterrupted flow of information. They certainly flooded back into his mind, mixed with the anger and disappointment he felt at the wrecking of the epic Five Days by Carlo Alberto's inglorious handing back of Milan to the Austrians, while he accompanied his sick wife to Lugano. He then rushed to Paris, where he sought - armed with authoritative credentials and a burning analysis of the Five Days that was clear in his mind but difficult to explain - to win over the French to the idea of military intervention in Lombardy. Lugano could have seemed to be his natural objective after that mission, in order to settle there. His many letters to his wife from Paris, however, announced his desire to go on to England; to some extent, because he

**Pictures of Castagnola and the house where Carlo Cattaneo lived from 1848 to 1869,** in "Il Secolo Illustrato", art. 13 (23 and 30 June 1901) (Lugano, Archivio Storico della Città, Casa Cattaneo)



really could not bear to be in Lugano among all those living there in exile, whom he blamed for placing the fate of Lombardy into the hands of Carlo Alberto, but also because of the precarious state of his wife's health. France, however, was not ready to intervene: Cattaneo's Parisian mission came to nothing. On 30 October 1848, he returned to Lugano and stayed there, an exile, for the rest of his life. But why, after all those repeated denials? Yet in a man of character (stubborn, said his wife; shy and proud, wrote Romeo Manzoni), changing his mind should not seem surprising in those volatile times. Over five decades, the European, French and Lombard scenarios changed frequently and without warning, and Cattaneo's choices too were liable to change, from seminary to lay studies, from his refusal to become partisan or involved in conspiracies or uprisings to the "diavolezzo" (as he was to call it) of the Five Days, from his refusal of politics to being struck by and totally absorbed in it. This changed opinion may have derived from Ann, or - according to the historians - to the climate of the Alpine foothills that agreed with her; or from his renewed hope that freedom could be instigated from the riverbanks of the free to those of the enslaved, from the Lugano side of the Ceresio to the other. Achieved with the concrete help of true friends, both Italian and Swiss, gathered at Lugano. In Switzerland, the Radicals had just eliminated the Sonderbund, the separatist league of the catholic Cantons and, after patient mediation between their centralism and the federalism of the Conservatives, had obtained a new Constitution. From the ancient League of free Cantons was born the federative state: political rights and individual freedom were guaranteed by the Constitutional Charter; an army, security policy and Government were in common: now a true Government, the Federal Council (no longer an impotent Commission of Canton dignitaries as the Diet had been), for which elections were planned for the 16th of November and included Franscini. For this reason, he had to leave Ticino for Berne, but at the point of decision, he felt acute distress: Berne was so remote for him and his devoted councillors, who could not follow him; he

would be alone among colleagues who spoke another language; and, above all, he felt a huge sense of guilt for leaving Ticino, for failing to live up to his promise and the immense task of making a modern state of it, the function as protagonist and general inspiration - historian, philosopher, politician scientist, economist, statistician - of Ticino radicalism. To whom could this be entrusted? The answer seemed obvious. What was certain was that Cattaneo (temporarily a guest at Franscini's house) saw his friend again in Lugano before the planned election and only on the following 16 December decided to apply for permission to live at Casa Morosini in Via Pretorio in Lugano. How can we not infer the real reason for his changed opinion? With the intuition and prophetic vision of the historian, he could not fail to understand his friend's difficulty, could not fail to feel the incitement from Milan driving him to return to his home country; could he now fail to live up to the mission his friend and fate seemed to have given back to him? There is certainly no proof of this: but how can proof be provided for a mission that had to remain a secret, because it was that of a foreigner acting as *alter ego* to the highest federal magistrate? Not that Cattaneo would not have been acceptable to the Swiss Radicals of the time, even if they were less fiery than those of Ticino. To the Jacobins, pre-revolutionary Enlightenment was preferable, «amazing ... ferment that [in the eighteenth century] could be seen in the nations», and adding: «It is something unknown to Europe, but is nevertheless true: while France went into raptures in vain over the new ideas, and announced a new era to Europe which it was not able to achieve except through the bloodiest of upheavals, modest Milan began a fourth phase of progress, entrusted to a gathering of magistrates who were, at the same time, a school of thinkers: Pompeo Neri, Rinaldo Carli, Cesare Beccaria, Pietro Verri are not names that are equally well known in Europe, but all are equally sacred in the memory of the citizens».

It does not seem far from the truth, therefore, to hypothesize that what contributed to convincing Cattaneo to stay was pre-

cisely also that mission which, leaving Franscini's shoulders, where he himself had helped to place it, now settled on his own, together with the determining support of Giacomo Luvini Perseghini, military leader and strong man of Ticino Radicalism. A high mission, with no honours, office, or authority, which would make the protection Cattaneo benefited from in Switzerland and Ticino more plausible despite his strongly anti-Austrian position as writer and spiritual head of the Radical-Democrats of Italy. So Cattaneo stayed: nor was he enticed by other offices, appointments, chairs, or parliaments.

The young Canton Ticino continued through the myriad difficulties of its task (which must have fascinated Cattaneo both for itself and because of its link with the cause of the Risorgimento) of civilizing in order to consolidate and reduce the differences with the Cantons from over the Alps, which were more solid in their economy and their secular self-government. In reality, the presence of Cattaneo, in the history of this young republic, was a strong one, one that brought him to be named an honorary citizen in 1858: and proud to be so, when Italy was still to be born. If Franscini had really secretly cherished the idea of having him as the person to continue a common mission, Cattaneo certainly filled the role fully, without, furthermore, losing any of his commitment and value as a writer,

For Franscini in Berne, his inspiration and collaboration were precious; both cooperated in dealing rigorously with the Swiss university problem, together they developed the ideas of the *Messaggio for the creation of a federal polytechnic*, untiringly promoted by Franscini. Cattaneo developed for him the concept of a federal university and the first warning for the federation and didactic coordination of the existing universities; these were ideas common to both, strongly ahead of their time, promoted with scientific foundation and method and inter-disciplinary openings. Franscini, therefore, was to have a profound influence on the courageous development of sciences in the Confederation between the nineteenth and twentieth centuries. Cattaneo too, like Franscini, advocated a Ticino Academy over the long term. In Ticino, he was appointed to offices by Councillors of State, the Schools, the administrators of the Canton and the City, teachers, Presidents of Mutual Aid Associations, politicians. Filippo Ciani, Councillor of State, entrusted to him the project of reforming secondary education in the Canton. His ideas underlay the law of 1852 on reorganizing studies; he promoted secular schooling, filling it with the humanities, the sciences and technical subjects. He not only saw to the organization and programmes of the new Canton grammar school after the secularization of the Convents, but he was also a member of the Commis-



**A deviation in the course of the River Ticino from Bellinzona to Lago Maggiore.**  
Plan by Rinaldo Rabbi, 1888  
(Bellinzona, Consorzio Correzione Fiume Ticino)

economist, historian and philosopher. While continuing to be actively involved, from Ticino, in the struggles of the Risorgimento, Cattaneo immediately entered fully into the reality and problems of Italian Switzerland.

sion that appointed the teaching staff. He refused to become director of the grammar school, as this should be a post filled by a Ticino citizen: his was the inaugural speech, the high statement of policy. He occupied the *Chair of Philosophy* for over twel-

ve years. He developed his philosophy from Vico, Locke, Romagnosi, as a sum of the discoveries of all the sciences, science of the sciences that was open to continuous evolution; human thought was its foundation, freed from metaphysical and theological bonds, capable of approaching truth through reason, intuition, experimental or deductive verification, comparison, confrontation, the instruments of free enquiry used with methodological rigour. He encouraged the new generations of Ticino to become educated for new times, to serve the cause of truth and progress through science and a strong moral conscience. In later works, he returned to, completed, and extended his basic *Corso di filosofia*, a discipline that he always saw as an open system. He investigated the progress made by associated minds, discovered the economic value of thought, promotion and economic enterprise, of intellectual conquest, almost making advances into the modern concept of immaterial rights.

His method of analysis was significant: in the sciences, philosophy, history, confronting political, economic and legal problems, he squeezed the problems to their essence, explaining it with a reductive procedure that to a degree evoked Marxism, and to another, phenomenology, though foreign to considerations of class or oppression. It was a prelude to positivism, though without rhetoric, and to an empirical criticism which rejected metaphysical certainties as much as it did nihilism. It acknowledged doubt as an instrument, not as a result.

Certainly, his secular and anti-clerical frankness did not please the conservatives and in the priesthood he had violent denigrators: from the mid 'fifties, *Credente cattolico* inveighed declaredly and violently against his teaching. In order to properly understand his anti-clericalism, it should not be overlooked that he was not lashing out against either the Bible's doctrine or priests as persons, but on one hand was against clericalism when it defended earthly privileges rather than the divine, or used the divine for material and political purposes, almost in a form of reverse simony; and prelates, on the other hand, who could seem to have infiltrated the Lombard

priesthood from Austria for purposes that were not exactly religious. Besides, it was the writings of philosophers of the mettle of Cattaneo that contributed, a century later, to the catharsis of Catholicism, with the recognition of freedom of thought. It



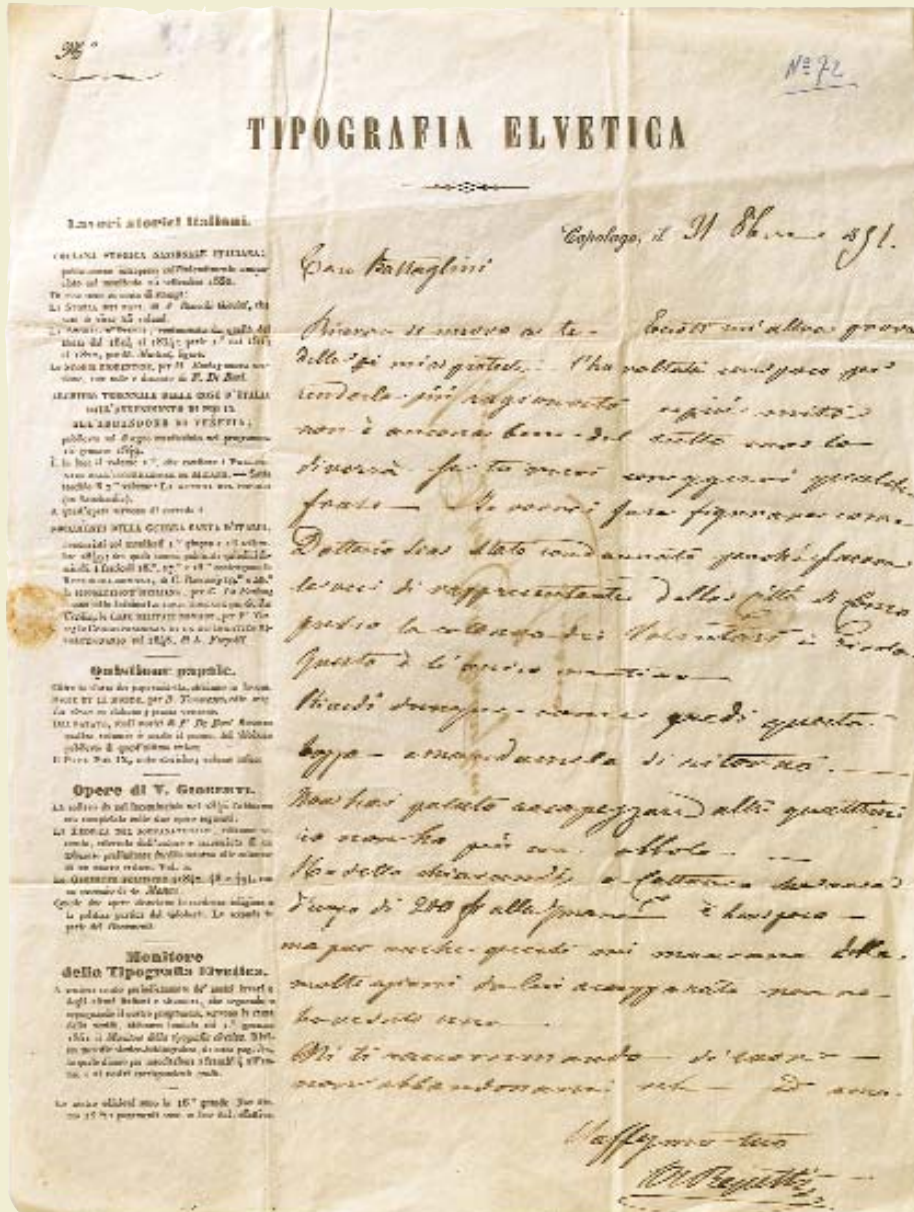
was not the Church itself, but the contribution of a certain clericalism and new dogma that denied fundamental liberty and the consequent anti-modern involution of the Church of the nineteenth century that was the cause of anti-clerical polemics and its high expression in Cattaneo.

Apart from his work at school, Cattaneo collaborated at all levels in many other sectors too as an expert, in drafting laws, executive orders, taking and supporting initiatives for great progressive technical, scientific, agricultural, industrial, commercial, and railway enterprises. His was the drafting of a law on exploiting, encouraging the parallel installation of machinery and industry. He gave impetus to ideas, research and projects for the reclamation of the Magadino plain, a huge undertaking which depended heavily on experience of the ancient water works and Lombard reclamation, which lay at the origin of the agricultural wealth of the Po Valley. He could see huge potential in the area and planned therefore a genuinely new organization of the territory, with the canalization of Ticino, the development of roads and railways, the reclamation of the marshlands, in order to increase agricultural revenues and reduce dependence on the imports that were controlled by Austria. Work of such dimensions required the participation of Lombard capital, enterprise and experience, but

it was just these interventions, the size of the work and the interests involved that caused the project to fail; it was taken up again after Cattaneo's death by the liberal-conservative Government, started up with difficulty and was completed much later. Already passionately interested since his years in Milan, in the design and construction of railways, Cattaneo considered how these could be extended to Italian Switzerland, how to set up the most suitable lines and have them accepted by the various States and economic organizations concerned. He admired the idea of the Bridgdam of Melide, which adapted nature to the needs of local people and, therefore, closely followed the work's designer, the engineer, Pasquale Lucchini, and in particular his reports and plans on railways. He referred to these in his studies on the Alpine railway tunnel. Amidst the praise heaped upon him for his choice of the Gotthard line, he never forgot to acknowledge the merit of Lucchini (who was later the designer of the helicoidal galleries that were used to manage large differences in level). Initially, for the great Alpine tunnel, the Swiss and foreign experts preferred Lucomagno, Spluga or even some other secondary passes to the Gotthard. Cattaneo and Lucchini, convinced that the Gotthard variation would cost less and provide more, would serve areas open to development and would enable Germany to be supplied more easily, far from Austria and its political and military pressure, put their faith in quantities of writings, plans, reports, innumerable contacts to convince opponents and the doubtful. It is to these tireless efforts while Cattaneo was alive, that Italian Switzerland owed the triumph of the Gotthard tunnel, which even Italy finally complied with, though he did not live to see the agreements of all the bordering countries, which were concluded shortly afterwards.

In Cattaneo's century, however, the study of even an excellent project was not sufficient: technical expertise and financial brokering were not at today's levels. A large part of the work, no less arduous, consisted of forming a group with the technical abilities and financial contacts required to guarantee its realization. This was a challenge that interested Cattaneo, as if to test

the soundness of his designs together with his technical-economic vision. As had already occurred in Lombardy for the railways, fuel, Monte sete, agriculture, even in exile Cattaneo promoted early initiatives that were not successful. For these, or bad investments by his brother, he had to meet even very serious losses. The need for funds may have contributed to creating in him that reputation for greed that Giovan Battista Pioda referred to in an unfortunate letter to his brother, Luigi, after his famous quarrel with Cattaneo: in a report to the federal authorities in October 1865, the State Councillor, Luigi Pioda, mistrusted the reliability of a representative of a company (supported by Cattaneo) which was hoping for a contract in the railway development. Cattaneo, of the opposite opinion, confronted Pioda at the Caffé Terreni (now called Olimpia) in Lugano, and called him a liar; the other retorted that he, as a teacher, was in his employ; Cattaneo promptly resigned from his chair and would not be persuaded, even by his friend Lavizzari, to change his mind. This episode perhaps concealed a cooling of the relationship between the surviving radical leaders and Cattaneo, whose relations with two deputies of the liberal-conservative opposition, Polar and Lurati, fervent supporters of the Gotthard, and with the Consortium that they supported for the work on the Gotthard, were severely censured by them. This criticism, in reality, overlooked that Cattaneo, while having, so to speak, inherited from Franscini the role of ideas man and inspiration of the Radicals, had never been a party man: his hostility did not involve all the Conservatives, but rather the Clerics, while Polar and Lurati passed as liberals in economics and non-clerics, as true liberal-conservatives, so that the attitude of Cattaneo was not to be censured. Here too, there seems to have been a parallel with Franscini, embittered in the last years of the Federal Council by his distance from his Ticino Radicals and from certain of their decisions that were not very liberal. However, to return to that accusation of greed, actual reality, with Cattaneo living modestly and dying in poverty, does not support it. Perhaps the fees earned for some consultations, even



though not comparable to international custom for one of the greatest economic-legal consultants of the time, may have seemed ostentatious in a land of poverty-stricken valleys.

Even in Lugano, which after the *Milanese rebellions*, underwent oppression and blocks by Lombardy-Veneto, Cattaneo continued to be very active in the Italian cause. At Ciani's printing works, the *Tipografia della Svizzera Italiana*, he published *L'Insurrezione di Milano*. He then started a collaboration with the *Tipografia Elvetica di Capolago*, founded in 1830 by Moderates, passed on to Radicals which then became a printers' of capital importance for the Risorgimento. On the arrival of Cattaneo, the Radical Repetti took responsibility for

all the actions of the printing shop. According to Caddeo, Cattaneo approached them «towards April or May 1849», with the «project of the *Archivio Triennale*», then with the collection of *Documenti della guerra santa d'Italia*, which appeared between July 1849 and 1851, followed by the three volumes of *Carte segrete ed atti ufficiali della polizia austriaca*. The printing shop also published many works of a political nature or aimed at civilization. It suffered the arrest of Dottesio (a tip-off or betrayal) and his sentencing to death, and the violent division between the exiles over the dissidence between Unitarists and Federalists. The scattering of collaborators and supporters, meant they were reduced to pure Federalists only, Cattaneo, Ferrari and few others. It was ironical that the

Letter on headed paper of the *Tipografia Elvetica di Capolago*, written by Alessandro Repetti to Carlo Battaglini on 31 October 1857. (Lugano, Archivio Storico della Città, Casa Cattaneo)

Austrians, instead, believed it to be a den of Mazzini supporters. They insisted that Berne must have the principle of international law respected, by which those enjoying asylum must abstain from interference in the affairs of other states. The Ticino Government attempted to resist, but with the block of 1852, Lombardy-Veneto expelled nearly six thousand Ticinese. Pressure grew on the Federal Government, on the Council of State, and on the exiles. Many of them undertook to observe neutrality, others refused, took to hiding, and if found were expelled, though not Cattaneo, who continued to be openly active. In the spring of 1853, in order to bring the oppression against the Canton to an end, Repetti agreed to close down the *Elvetica*; Cattaneo resisted, sought to bring it back to life, printed the third volume of the *Archivio*, continued to write for Italy. But he too now concentrated increasingly on his activities as teacher, counsellor, scholar. He contributed to local newspapers (above all to the “*Gazzetta Ticinese*”), and to Italian newspapers and journals. Then the situation in Lombardy and all over Italy relaxed: at the end of 1859, Cattaneo started up the second series of the “*Politecnico*”. In his last, important articles, his ideas were so advanced, democratic and at the same time elitist, that they did not attract the disciples they deserved. His public - perhaps like the students at his lessons of philosophy at grammar school - were perhaps not always able to keep up. In Ticino, Cattaneo lacked a university chair, with generations of students, who were capable of understanding, extending and disseminating his ideas, which thus remained isolated. But his teaching becomes topical in difficult times. It is still so today, for its interdisciplinary intuition, its seeking for the explanation of events and current situations, also in Geology, Anthropology, Archaeology, History of Peoples, Ideas, and Languages; its awareness of the attention that sciences, arts, technical matters, economics and territorial organization owe each other; for its open-mindedness to progress in the sciences and technical subjects; in economics, he was among the first to have understood the future importance, including financial importan-



ce, of ideas, inventions, communication, the entrepreneurial function, of discoveries; it is still current because of his conviction of the freedom of knowledge and research, but also because of the need to unite them with technical matters; it is still current in the social sciences, because of its perception of the peculiarity and value of the working of associated minds, but also because of the leap in quality that comes from the genes, which together with ideas and works mark out the ways of the future. It still is, in his writing, for the power and incisiveness of his language, images, descriptions, for their interior strength, without rhetoric. It still is, in politics, because of his liberal, secular, non partisan ideas and because he understood the dangers of fanaticism; because of his natural concept of a federalism that would grow from the bottom upwards in a need for unity in diversity that from cities rises to regions, nations and Europe. These are all aspects that still today make knowledge of his works important. More widespread in the past, better known abroad, they could perhaps have contributed to providing greater strength in the first half of the nineteenth century in Italy and in Europe, to the “politics of reason”, which might have contained the excesses of ideologies, nationalism, racism, that so dramatically

**Dedication to Konrad Kern, written in the hand of Carlo Cattaneo.**  
Cover and half title of a copy of Carlo Cattaneo, *L'insurrection de Milan en 1848*, Paris, Amyot, 1848 (Lugano, Collezione privata)

shook the twentieth century. The bicentenary of the birth of Cattaneo has given rise to and, in part, has already launched an imposing series of works by him or about him that are worthy of reading and contemplation.

If the fleeting and hurried times we now live in, are better able to understand his spiritual legacy, then the celebrations of his Bicentenary will not have been in vain. The journey backward in time to meet with Cattaneo, may become a journey forward into the future; an ideal Grand Tour to encounter the essential elements of a modern map of the human spirit, the fascinating discoveries of a great thinker.

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## Some writings by Carlo Cattaneo on the province of Sondrio

*by Pier Carlo Della Ferrera\**



In the context of studies of Cattaneo that were intended to «bring to the individual municipal home countries that intimate and truthful awareness of themselves» interest in the province of Sondrio, to which Cattaneo had started to devote his attention many years before the publication of *Notizie naturali e civili su la Lombardia* in 1844, could hardly be lacking.

In one of the first Italian economics weeklies, the Milanese “Eco della borsa” a short article appeared, in fact, on 8 October 1837 entitled *Rivista della Valtellina*, in which Cattaneo outlined a profile of the valleys of the Adda and the Mera considered mainly from the geographical and economic points of view.

The literal matching of some passages of the article with *Topografia statistico-medica della provincia di Sondrio* by Lodovico Balardini, printed in Milan in 1834 by the Società degli Editori degli “Annali Universali”, makes it clear that this was the main source referred to by Cattaneo for the drafting of the article. Furthermore, Cattaneo must also have had in mind the *Descrizione statistica della Provincia di Valtellina* drawn up in 1833 by Pietro Rebuschini, a report from which he transcribed some passages in a manuscript conserved at the Archivio del Museo del Risorgimento in Milan.

The paper by Cattaneo, written with the undeclared, but fairly evident, intention of representing reality in a precise and objective manner, provides a picture of Valtellina that coincided in general with the usual one: the raising and marketing of cattle, wine production, mining activities, the working of ollite stone and slate are indicated as the principle sources of wealth. At a first glance, some aspects of the essay may nevertheless be surprising: it is remarkable, for example, that Cattaneo, emphasizing the limited area of lands suitable for cultivation in the Province of Sondrio, should consider the economy of Valtellina to be predominantly one of manufacturing. Evidently, however, he had before him the production reality of the plains of lower Lombardy, in comparison with which the agriculture of a mountainous area could only seem modest and of limited potential. Moreover, in nineteenth century Valtellina, probably only artisan activities could guarantee a minimum prof-

it and the possibility of progressing from an economy of simple subsistence level.

Written in a spare, elegant style, the writing is practically devoid of the author’s personal opinions, unless exception is made for the decisive and, moreover, fully justified position he took regarding excessive deforestation and the practice of transporting timber by flotation.

### Rivista della Valtellina<sup>1</sup>

*The Province of Sondrio which belonged previously to Grigioni, then coming under Austrian government, is made up of Valtellina itself and the two ex-counties of Bormio and Chiavenna.*

*All this stretch of the country together borders to the east with the Province of Bergamo and the Tyrol; to the south it borders*



*again with the Province of Bergamo and that of Como, to the west with the latter and Switzerland, to the north with Engadine.*

*Sondrio, a small union of houses, is the capital of this Lombard province and is placed at 27° 32' 7", 9" longitude, 46° 10' 0", 3" latitude, and is 52,577 m distant from the meridian of the spires of the Duomo of Milan. The valley is split politically into seven districts, of which the chief towns are: Sondrio, Ponte, Tirano, Morbegno, Traona, Bormio, and Chiavenna, and comprises an area of 82 square miles, corre-*

First page  
of Carlo Cattaneo's  
article *Rivista  
della Valtellina*,  
in "L'Eco della Borsa",  
no. 40 (8 October 1837)

<sup>1</sup> "L'eco della borsa", no. 40 (8 Oct. 1837), pp. 158-159.

sponding to 3,197,492.840 m with a population of approximately 87,000, of whom 3,700 belong to the local capital.

Roads. – From the port of Colico to the ridge of the Stelvio there runs a wide military road that is 126,000 metres in length;



from the same port to Bocca d'Adda there is another that is equally wide, which is as yet uncompleted; from Chiavenna to the Swiss border, on the summit of the Spluga, a magnificent carriageway winds for some 32,000 metres; another from Chiavenna to the Swiss border in the Pregaglia valley, towards Castasegna, is also a carriageway for 2,000 metres; from Tresenda to Aprica, on the borders with the Province of Bergamo, there is a road that can barely be ridden on horseback for 9,000 metres; from Cosio to Traona, there is another carriageway for 2,000 metres.

Mountains. – Two long mountain chains, almost parallel, close Valtellina to the south and the north, and another chain closes it off to the east. In a few places, these chains seem completely bare, while the remainder are now covered with vineyards, then pastures, then forests. The northern peaks are sublimely clothed with eternal snows, making a majestic impression when gazed at from afar. There, the sounds of living nature die out; no other sound can be heard except that of the breaking of the ice when the energy of the sun is such as to soften and tame its strength. The principle peaks of these mountain ranges are Monte Cristallo at

the col of Stelvio, 3911 metres high<sup>2</sup>; Monte delle Disgrazie, in Valmalenco, 3611 m.; monte Scalino, 3330 m.; the Redorta, in Valle Ambria, 3043 m.; Monte Diavolo, 2918 m.; the Stelvio, 2800 m.; the Spluga, at Chiavenna, 2117 m.; the Spluga, above

Traona, 2845 m.; Monte Mesuccio, 2820<sup>3</sup>; the Legnone, 2641.

Principle water sources. – Such mountainous countryside is obviously provided with an abundance of water which, disastrously for the valley, rushes down from their peaks with such force as to cause irreparable damage. The principle river is the Adda, which springing from the Braulio, runs through the whole valley in an east-west direction and flows into the Lario. The Valviola, originating from the small lake of Livigno, receives this river into its course; the Fridolfo, springing from Monte Gavio; the Mallero, a disastrous torrent, which in 1834 brought devastation to the capital of Valtellina, that leaps from the glaciers of the Malenco Valley; the Bitto that comes from the top of Alberino<sup>4</sup>; the Poschiavino, distilled from the peaks of Monte Bernina; the Ravasco, originating

<sup>2</sup> The altimetrical information, which in the rest of Cattaneo's writings is very precise, is in this case definitely erroneous, since Mount Cristallo measures 3434 m. Cattaneo may have confused the Cristallo with the Ortles, which is 3916 m. high.

<sup>3</sup> This is Monte Masuccio (2816 m).

<sup>4</sup> This is very probably a deformation of the toponym, Albaredo.

in the glaciers of Monti Teverino, Spella and Cornacchio<sup>5</sup>; the Masino, which runs down from the Monti d'Oro, Zocca, Pizzo, delle Disgrazie and Corna Rossa. The Inn starts in the Valley of Livigno, continues its course into the Upper Engadine and is joined by the Valmona, which rises in the Monte del Ferro<sup>6</sup>. In the ex-county of Chiavenna top of the list is the Mera, an imperious torrent that rises in the Pregaglia Valley and discharges into the Lake of Mezzola, and the Liro, formed by the discharge from the Spluga glaciers, which has its outlet in the Mera. Apart from these principle torrents, a quantity of secondary streams cut the mountains and the Valtellina plain in all directions, occupying and devastating a large part of the territory, which could otherwise be enlivened by agriculture.

Territorial production. – To call the Province of Sondrio agricultural land would be a way of showing total ignorance of its scarcity of cultivable land. Very little wheat or melgone<sup>7</sup>, then, no rice or flax, and little fruit, even though that little is very tasty and attractive. On the other hand, large quantities of fraina (buckwheat), barley and panico<sup>8</sup>. Its primary wealth, however, lies in its exquisite wines, first among which being those of Sassella and Inferno which, when exported, greatly improve in flavour, in the raising of cattle and its abundance of timber. It is painful to see, however, that self-interest, blind to the future, is cutting down those woods respected by the ages without any consideration, and to facilitate its means of transport, makes use of flotation which creates great damage. This consists of abandoning the cut and pruned trunks on the tops of the mountains to the impetus of the slope, allowing them, as they roll down, to flatten the small, newly born plants, which one day would have grown large and high on those mountain ranges, and drag with them the small quantities of cultivable earth which covers the core of the mountain. When they reach the valley below, they tumble into the Adda, so that in turn they crash against the banks and bridges in all the other points of shelter. Further damage suffered by the inhabitants of Valtellina from this denuding of the mountain tops,

are the gragnuole<sup>9</sup>, which were unknown to the fathers of the present inhabitants, but now occur often and destroy the few hopes of those poor valley dwellers. Metal, too, constitutes a source of wealth for Valtellina, including, though in small quantities, also some gold and silver. Iron is mainly found at Forte di Fuentes, Girola, in the valleys of the Bitto, the Masino, of Malenco, of the Fucine, in Val d'Ambria and in Valle del Liri. Lead and magnetic iron are found on the Campeccio<sup>10</sup> in Val Livigno and in Valmalenco; there is an abundance of copper in the Val d'Ambria, not yet tested, however; copper pyrites are at Boffetto, Aprica and in Valmalenco, where petroleum is also found, as well as asbestos and beautiful rock crystal; in a number of places in the Province there is marble, slate and ollite stone. The many roads criss-crossing the valley facilitate the carrying out of this mineral production. Industry. – Although the inhabitants of Valtellina are accused by some people of not taking advantage of each piece of land that could be exploited, even despite the overflowing of the rivers, yet no-one can call them inactive as far as manufacturing industry is concerned. This is shown mainly in different sorts of iron works, and in work with ollite stone, of which there are great seams in Valmalenco and at Chiavenna, with which all kinds of pots are made, sorts of cooking pots, very suitable for cooking food.

<sup>5</sup> The most likely interpretation of this somewhat obscure passage would be a reference to the Roasco torrent in the western Val Grosina, of which the springs are found in the area dominated by the peaks of Trevesina, Sperella and Cornin.

<sup>6</sup> Cattaneo is referring to the Spöl torrent, a tributary of the Inn, which receives the Acqua del Gallo, which rises near the peak of the Ferro. Before flowing into the Spöl, the Acqua del Gallo joins the waters of Val Mora.

<sup>7</sup> Maize.

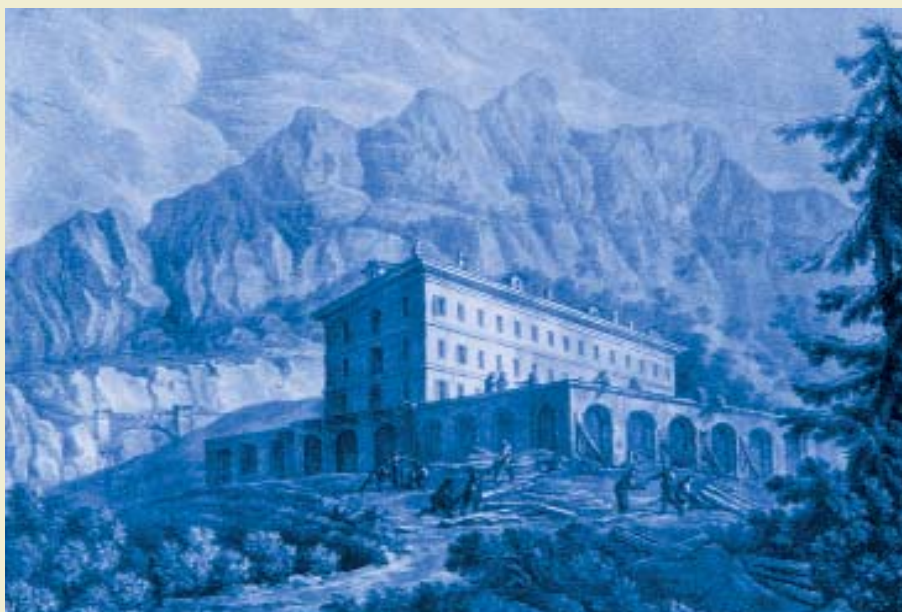
<sup>8</sup> Panico (literally the ear of millet) is a grain similar to millet, grown as birdseed.

<sup>9</sup> Avalanches.

<sup>10</sup> This is very probably Monte Campaccio (3007 m).

*A further source of wealth is slate, a greenish, layered stone, with which to cover roofs instead of tiles. A busy cotton factory employs a part of the population at Chiavenna; the keeping of bees near Bormio produces types of honey that are said to be better than those of Spain; a*

*tion, there is no mention of any article on the thermal waters of Alta Valtellina or Masino. To this subject, however, Cattaneo devoted a specific, if brief, paragraph in his greater work, *Notizie naturali e civili su la Lombardia*.*



*large number of producers of high and low fat cheeses, the most popular of which being the sweet cheese of the Valle del Bitto keeps food in the mouths of many Alpine inhabitants, just as many others make their living from making and selling charcoal.*

*The four yearly fairs at Bormio, Chiavenna, Delebio and Tirano, and in particular the last three, provide very active business in horned beasts and sheep; the ten markets also held annually at Berbenno, Bormio, Chiavenna, Chiuro, Fusine, Grosio, Novate, Ponte, Tirano, and Valle s. Giacomo, and the two weekly fairs held at Sondrio and Morbegno, are all reduced, from the one at Chiavenna outwards, to a cold merchandising of foodstuffs and haberdashery. How different from the populous markets in the rest of Lombardy! and yet they are always busy and industrious. We will speak specifically about the waters of the Masino and de' Bagni of Bormio, another source of activity in Valtellina.*

In the bibliography of Carlo Cattaneo's writings compiled by Alessandro Levi in 1928, which is still today the most authoritative catalogue of Cattaneo's produc-

Health waters in the Province of Sondrio<sup>11</sup>

*Valfurva. – In a lonely valley, eight miles above Bormio toward the south-east, at the bottom of a marshy meadow, this water, also called the water of St. Catherine and discovered around 1700, is collected with primitive equipment. It is cold; it develops gaseous carbonic acid and contains salts of iron and also magnesium and sodium. The people staying there in the height of the summer number about 155, but many others lodge in Bormio, having the mineral water brought to them from the valley. It was analyzed by Dr Peregrini<sup>12</sup>.*

<sup>11</sup> *Notizie naturali e civili su la Lombardia*, Milan, published by Giuseppe Bernardoni di Giovanni, 1844, pp. 254-255

<sup>12</sup> Dr Luigi Peregrini, a Milanese chemist, analysed the thermal waters of Bormio and Santa Caterina in 1835, on the instructions of the Lombard-Venetian Government. This is attested to by the writings of Francesco De Picchi *Cenni storico-medici sulle acque termali di Bormio, aggiuntavi un'appendice intorno alle acque acidulo-marziali di Santa Caterina in Valfurva*, Sondrio, Tip. Provinciale Della Cagnoletta, 1835, pp. 16 and 52, and *Metodo ragionato per bere le acque salino-acidulo-marziali di Santa Caterina presso Bormio coll'aggiunta della relativa analisi*, Milan, Tip. Giuseppe Crespi, 1840, p. 36.

Pietro Martire Rusconi  
**View of the new installations at the Bagni di Bormio**, in Francesco De Picchi, *Cenni storico-medici sulle acque termali di Bormio, aggiuntavi un'appendice intorno alle acque acidulo-marziali di Santa Caterina in Valfurva*, Sondrio, Tip. Provinciale Della Cagnoletta, 1835 (Sondrio, Biblioteca Civica Pio Rajna)

Bormio. – *A little higher than Bormio, along the Via dello Stelvio, these springs bubble up from the ground, some on the slopes of the mountain, others from its layers, yet others in the bed of the Adda, with a temperature ranging from 37° C to 44° according to the season. They contain a little hydrogen sulphurate gas, with sodic, potassic and magnesian salts and are used in baths, fumigation, mud baths, and showers, and are applied also to animals. – They belong to the eight Communes of the ancient County of Bormio, whose inhabitants have the right to use it free of charge*

which Cattaneo traces a brief geographic profile of the mountainous chains that outline the Valtellina, the highest valleys of the Province of Sondrio and some of the most important communication passes with the nearby Swiss Canton of Grigioni.

*The river, whose course determines the most general position of the country [Lombardy] is the Adda, which penetrates and runs across it from one end to the other. [...] Above [Lario] starts the Val-Tellina [...]; the summit of the valleys, where Bormio is located, forms a tableland that is distinctly*



*and who number approximately 386 in the annual balance. In the new building erected by the eight Communes for the use of visitors, about 147 bathers can be accommodated. In all, the days of residence add up to 3270. Analyzed by Dr. Peregrini.*

Màsino. – *In the interior of Val-Màsino, which ends up between Sondrio and Traona, there are hot springs of 35° C to 40° C containing predominantly salts of sodium and magnesium. They are used in drinks, douches, mud baths and fumigation. There is accommodation for the needy and 175 bathers, amounting in all per day to approximately 1000.*

*Analyzed by P. Ottavio Ferrario and Dr. Peregrini<sup>13</sup>.*

*elevated (1221 m) and has a really northern appearance. And from there, it is possible to go further up and enter the basin of Val-Furva (1768 m), at the foot of those vast glaciers which, with the exception of a few peaks in the western Alps, tower over all the European continent. On the other side of Bormio, with an only slightly greater climb, the pass of Fraele (1986 m) which can be ridden upon, can be reached. From here, on the side by now of the Black Sea, one comes before the Val-Bruna and the other solitary lands where the highest of our communes is*

**Geographical Atlas of Italy. Kingdom of Lombardy-Veneto. no. 2. Government of Milan. Provinces of Como and Valtellina. ca. 1840 (Sondrio, Biblioteca Civica Pio Rajna)**

A description of the mountains and passes of Valtellina and Valchiavenna<sup>14</sup> Still taken from the *Notizie naturali e civili su la Lombardia*, in appropriate excerpts and presented in a different order from the original, there are given below some texts in

<sup>13</sup> Padre Ottavio Ferrario (1787-1867), master of natural sciences at the Istituto di San Giovanni di Dio, where today's Fatebenefratelli originated, had published the analyses on the waters of Masino as an appendix in memory of Lodovico Balardini *Delle acque salino-termali del Masino nella Valtellina*, printed in 1835 by the Tipografia Provinciale Della Cagnoletta di Sondrio. The same memoir also gives the results of the analyses carried out by Dr. Peregrini.

<sup>14</sup> *Notizie...*, cit., p. 13-14, 7-10.



to be found, the transalpine Livigno (1774 m). Val-Tellina comprises two further branches, that is to say, the valleys of the Mera and the Liro. Val-di-Mera, slightly higher than Chiavenna (332 m), takes the name of Val Pregallia, and belongs to the territory of Grigioni; it is at 1091 m of altitude, under the Castle of Soglio, and (1497 m) at Casaccia, where it ends. From there, with a climb of only 330 m. the Rhaetian Alps are crossed by the pass of the Maloja (1827 m). The descent is to the plain of Alta Engadina, full of the lakes of Silvaplana, which with the tributary of the nearby glaciers feed the limpid streams of the Inn. However, if, turning to the left from Casaccia, the climb is made instead to Monte Sèttimo (2390 m), one comes out on a rideable road at Bivio on the side of the Rhine, which place then, by the carriageway pass of Monte Giulio (2036 m), again joins Silvaplana. Since the bottom of all those secluded valleys is already so high, to pass from one to the other requires only a short climb, and these are the most accessible and least dangerous and most ancient passes in the Alps. The Pass of the Stelvio is almost one thousand metres higher than Maloja and does not cross the main chain of the Alps. Val-di-Lirio points from Chiavenna towards

the north. At Campodolcino the height of 1081 m is already reached; and the Pass of the Spluga is at 2117.

The Rhaetian Alps in our country [Lombardy] form a great wall that is about 124 kilometres long, whose twists and turns as are shown by the Monti Bràulio, Pizzo-Ferro, Fuscagno, Bernina, Maloja, Sèttimo, Gallegione, Pizzo-Stella, Groppera, Spluga, Tamburo<sup>15</sup> and Ferraro<sup>16</sup>, constitute an arc that turns towards the north and embraces the high valley of the Inn or Engadine, on all its northern slopes that extend from Monte Bràulio to Monte Sèttimo, and on the remaining side to the Rhine. On the Italian side, all the waters flow into the Adda, which runs below like a moat under a fortress. The topmost summit of the peak seems to be Monte Fuscagno, estimated at 3088 m; the lowest gorge is Monte Maloja, which rises nevertheless to 1827 m. But in front of this continuous curtain wall, some even higher peaks reach up like towers, such as Pizzo Scalino (3330 m) between Val-Puschiavo and Val-Malenco, and Monte

Eugenio Amus  
**A spot in Valtellina  
with Garibaldi  
and his volunteers  
moving towards the  
Stelvio** (detail), 1861  
(Milan, Museo  
del Risorgimento)

<sup>15</sup> This is the Tambò Peak (3275 m).

<sup>16</sup> This is the Ferrè Peak (3103 m).

Relazione Statistica della Valle Valtellina sommaria nell'anno 1842

Del R. Dotto. D. Ant. Lugani

Carpi: per tre miglia a pari il lago di Mezzola: per rimanenti sette miglia, facile navigazione, ma difficile i passi alpini, e dipendenti le foci, per cui si può alcuna navigazione, si può a questo stato all'irrigazione le acque, giulunge e neppure fedi, in <sup>forma</sup> dei lavori e delle irrigazioni.

Superficie. Est. conf. 3195, 927. Miglia geograf. 932. Top. vicine di q. 288667406.

lunghezza M. geograf. 97  $\frac{1}{2}$ ; larghezza massima 18; minima 3  $\frac{1}{2}$ . Fiume di

Per la lunghezza, cioè la comunicazione col centro. Esteso confine da grandamp. l'Alpe e forma. Costante dal Novato, si stende con forma pendente per miglia 11 per

mida verso i valli sinque verso, fino a Novato, ora comincia la pianura in forma di baleno largo in altezza e lungo due. Indi per miglia 12 fino a Gioio, sinque in forma di valle stretta, e lunga due. Indi per miglia 12 fino a

qual tratto presso Sondrio uomini possiedono del terreno Mezzola, che oltre il passaggio dell'adda avevano formato un lago con un'isola di 40. Il piano la pianura si dilata, e quindi minor pendente per miglia 5 fino a Valtellina, ora un altro ripianamento della valle stessa, e nel 1807 un ripianamento dell'opposto monte Mafessio, che allora aveva formato il lago di Sorcio produsse il ripianamento che incontrasi per miglia 2 fino a Tirano. Quindi il piano si dilata, e dopo miglia 5 propaga per altre 10. In valle sola pendente di un miglio per cento, la sua larghezza media è di circa miglia 1  $\frac{1}{2}$  più o meno si può dire due vantaggi di natura trasportata dai torrenti. Le valli laterali sono 9, cioè Livigno, Grosina, Melis, Fontana, Cimbro, Malenco, Bredon, Masino, Dite.

L'altra parte della pianura, partendo dalla spuga, dopo 21 miglia di discesa raggiunge il bivio con quattro. Nelle più 2 miglia fra a lato del tratto di Sarnio fra valli; per altre 2 offre un piano largo mezzo miglia; più si spinge fra i monti fino ad Intra, poi per breve tratto si dilata, più si spinge fra il Comodolengo, ora si allarga in piano; poi si spinge fra Deggio e Comate fino a Dite; quindi per miglia 6 dipende con dato fondo parallelamente lunghezza d'un miglio al torrente si segue la Valle Poggia alla per sole miglia 4  $\frac{1}{2}$  appartiene a grossa pianura, ed ha pendente del 3  $\frac{1}{2}$ . Più sotto è la Valle Codice; e dall'opposto parte la Val Madrugio. Dopo la spuga la Valle di Lei scende verso Sottotegolo.

Altezza sopra il mare	
Monti S. Zeboni V. Tenna - Intra 3871	Mafessio <del>4100</del> 2820
Difogio V. Malenco 3611	Masino 2810
P. Soriano 3330	Pizzo Tudeo (Prato) 2699
M. Galligione 3132	Como valle 2662
Fusugno 3087	Carate (Sondrio) 2525
Madrisa V. Comate 3043	Pizzo Vespoto 2331
Pizzo Ferro V. Livigno 3037	Jallonecchi (Prato) 2131
Novato 2911	
P. del Diavolo V. Ambrosio 2918	
Cimbro 2902	
Spuga Tenna 2845	



*Disgrazie (3678 m) between Val-Malenco and Val-Màsino, which seems the most lofty of all, and Monte Ligoncio (3320 m) between Val-Màsino and Val-Pregallia. The two biggest glaciers, which here are given the name of vetrette or vetriali, are between the Bernina and the Maloja, backing onto the Val-Malenco, and between the Sèttimo and the Gallegione backing onto the Pregallia. The first feeds the small lakes of Silvaplana, from which the Inn rises; the second is further to the east and is the main source of the Rhine.*

*This, properly, is the part of the main Alps that touches our territory, though crossing on both sides the soil of Grigioni in the two stretches of Bernina and Maloja. [...]*

The Foothills of the Alps. – *In the internal Alps, or the Foothills of the Alps, we shall see three chains, the Camonia, the Orobia and the Mesolcina, that are very distinct by height and structure.*

The Camonia Chain. – *This starts from Monte Bràulio just above the Pass of the Stelvio, between the basins of the Adda and the Adige. It forms primarily an enormous mass which, arranged in a precipitous circle around the health springs of Val-Furva, constitutes the culminating point (3917 m – 3871 m), not only of the Lombard-Veneto Kingdom, but of the whole Empire. Among those high glaciers are numbered Monte Cristallo, the Ortele, the Regio or Zebrù, the Cevedale, the Ciuffalto<sup>17</sup>, the Confinale, the Rocca-Marzia<sup>18</sup>, the Tresero, and the Corno-Tre-Signori, which a few years ago marked the boundary between the States of Grigioni, the Veneti and of the Bishop Prince of Trento. The chain then breaks into the shape of a ridge and, under the name of Monte Tonale, famous in the superstitious legends of our fathers, divides the Valley of Ollio, or Val-Camònica, from the Valley di Sole which belongs to the basin of the Adige. Another formidable mass is then formed around the glaciers of Monte Adamo<sup>19</sup> (3556 m), from which perhaps twenty deep valleys then set off in all directions like rays and diverge to the Adige, the Ollio, and provide the sources of the Clisio<sup>20</sup> and the Sarca or Alto-Mincio. [...]*

*The Camonia Chain first covers 20 miles, starting from the Stelvio and the main chain of the Alps up to Corno-Tre-Signori,*

*then flanks the Val-Camònica for 45 miles up to Monte Guglielmo; 120 kilometres in all. Its highest glacier in our territory is Monte Zebrù (3871 m), since the Ortele next to it, which is 46 metres higher (3814 m), pushes out from the chain in the guise of a bulwark and belongs to Val-Venosta. The most notable Passes in the Alpine part of this chain are two: Tonale (1976 m), which is 150 metres higher than the Pass of Maloja in the main chain of the Alps, the Pass of the Stelvio, the highest carriageway in the world (2814 m). [...] Because of their height and continuity, the Camonj Mountains always constituted a more effective obstacle than the gorges of the Alps. And in fact the mountain ridge of the Stelvio is a separator of languages, whereas the whole of the Rhaetian Alps, as will be seen, constitutes only a separator of dialects.*

The Orobia Chain. – *The second chain of the foothills to the Alps, or the Orobia Chain, an ancient boundary between the Grigione and the Veneto domains, also branches out from the rim of Val-Furva, but runs from east to west in a parallel direction to the Rhaetian Alps up to Lake Lario, almost forming a repeated wall and leaving, as mentioned, the deep ditch of the Val-Tellina in the middle. The first part of this chain, up to the Pass of Aprica, can be said to be a branch of the Camonia chain and, in fact, separates Val-Camònica from Val-Tellina; here are found Monti Gavio (3582 m), Sobretta, Boerio, Serott<sup>21</sup>, Mortarolo e Padrio. After the Pass of Aprica, which descends to 1238 m, it continues in a prolonged wall up to Monte Legnone, which, in an almost perpendicular mass, overhangs the Lario. In all*

<sup>17</sup> It is very probable that Cattaneo is referring to the Cima Cevedale (3757 m), the lower peak of the Mountain of the same name, whose German toponym, still today, is Zuffallspitze.

<sup>18</sup> This is the Rocca Marcia, a ridge situated between the Cevedale and the Vioz, previously in the territory of Trento.

<sup>19</sup> The Adamello.

<sup>20</sup> The River Chiese.

<sup>21</sup> This concerns the Corno di Boero (2878 m) and the Serottini mountains (2967 m).

*this stretch, the highest summit is the Brunone (3061 m)<sup>22</sup>; the Pass of S. Marco, the least harsh and most accessible, is equal in height to the Alpine passes (1828 m). However, this chain, because of the lower height of its peaks, because of its narrow ridge and because of the protection provided behind it by the great Alps, does not contain true perennial vetrette except around the sources of the Serio. [...]*

*The Mesolcina chain, – The third chain of foothills to the Alps and the lowest (2264 m) is the Mesolcina, which starts from the Rhaetian Alps between the passes of the Spluga and the Bernardino, and with its continuous ridge separates the side of the Adda from that of Ticino, up to Monte Jorio.*

*Notizie naturali e civili su la Lombardia* is probably Carlo Cattaneo's principle work. The author defined it as «a collection of information on that region of Italy, by nature and civilization distinct from others, to which, because of singular circumstances, the name of Lombardy, already so vast and variable, remained circumscribed». The work aimed, with the collaboration of local experts and specialists in the various fields of knowledge, to provide a guide that could outline an organic framework to the Lombard territory through the «most necessary information» concerning «geological aspects, climate, waters, flora, fauna, the status of the population and health arrangements, the different types of agriculture, business, industry, language, primary origins and subsequent culture». *Notizie naturali e civili* came out in 1844; the plan to produce a second volume, in which other materials that had already been partly collected and organized, was abandoned in 1847.

Cattaneo's correspondence, and above all the documents conserved in the Archive of the Museo del Risorgimento in Milan, allow us to establish which were the main references made by this scholar in drafting the chapters of the *Notizie* relating to Valtellina.

A letter of 18 April 1844 to the Brescia Botanist, Vincenzo Casati, cites a manuscript

with «a short note by the late Dr. Massara on the rare plants of Valtellina, of which he numbers approximately 70, indicating for each one the particular valley where it could be found». Exactly a month earlier, writing to the same person with regard to the status of the work during the preparatory stages of the guide, Cattaneo included in the list of «collaborators and contributors», Mr. Visconti Venosta, with a definite allusion to the man of letters and scholar of economics, Francesco (Tirano, 1797-1846), the father of the more widely-known Emilio and Giovanni. The report that Visconti Venosta forwarded to Cattaneo for the *Notizie* was so well constructed and comprehensive that it deserved publication on its own. It came out, in fact, in installments from April to August 1844 in the “Annali Universali delle Scienze e dell’Industria” and was printed in abstract, with the title *Notizie statistiche intorno alla Valtellina*, to be given to the scholars meeting at the VI Congresso degli Scienziati held in Milan in September of the same year. It is obvious, in any case, that the work of the Valtellina writer was of service to Cattaneo in the drafting of the *Notizie naturali e civili su la Lombardia*.

Apart from the writings of Balardini, Rebuschini and Visconti Venosta that have already been mentioned, Cattaneo obtained information on the Province of Sondrio from the “Statistica dello Spluga” by the Engineer, Galeazzo Krentzlin and from the reports by Luigi Torelli, who at that time was a functionary of Lombardy-Veneto in Milan, and by Antonio Lugani, who was present in Valtellina from the eighteen-twenties, first as deputy-delegate, and then delegate, of the Imperial Royal Government. In fact, the names of the latter also figure in Cattaneo's manuscripts on Valtellina that are conserved at the Museo del Risorgimento in Milan. In particular, the notes inferred from the memoirs of Lugani, dated 1842, for the substance and richness of their contents seem to have fulfilled a fundamental importance in the preparation of the notes on Valtellina that Cattaneo included in his work on Lombardy.

<sup>22</sup> The peak of the Brunone (2724 m) is found to the west of the Redorta and is a little more than 3 kilometres distant from the Peak of di Coca (3052 m), which is the highest point of the Orobita chain.

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*Pier Carlo Della Ferrera was responsible for the biographical profile of Carlo Cattaneo and the art research.*

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*Photographic References*

*Pino Brioschi, Bellinzona (p. II, XI, XV, XVI, XVIII, XX, XXII)  
Massimo Mandelli, Sondrio (p. XXIX, XXX)  
Paolo Manusardi, Milano (p. V, XXXI, XXXII)  
Angelo Sgualdino, Sondrio (p. XXIV, XXV)  
Foto Toso, Venezia (p. XXVI)*

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*Reverse of flyleaf:*

Carlo Cattaneo,

*Di una nuova linea per la strada ferrata*

*Lombardo-Veneta*, in "Bollettino di notizie  
statistiche ed economiche".

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