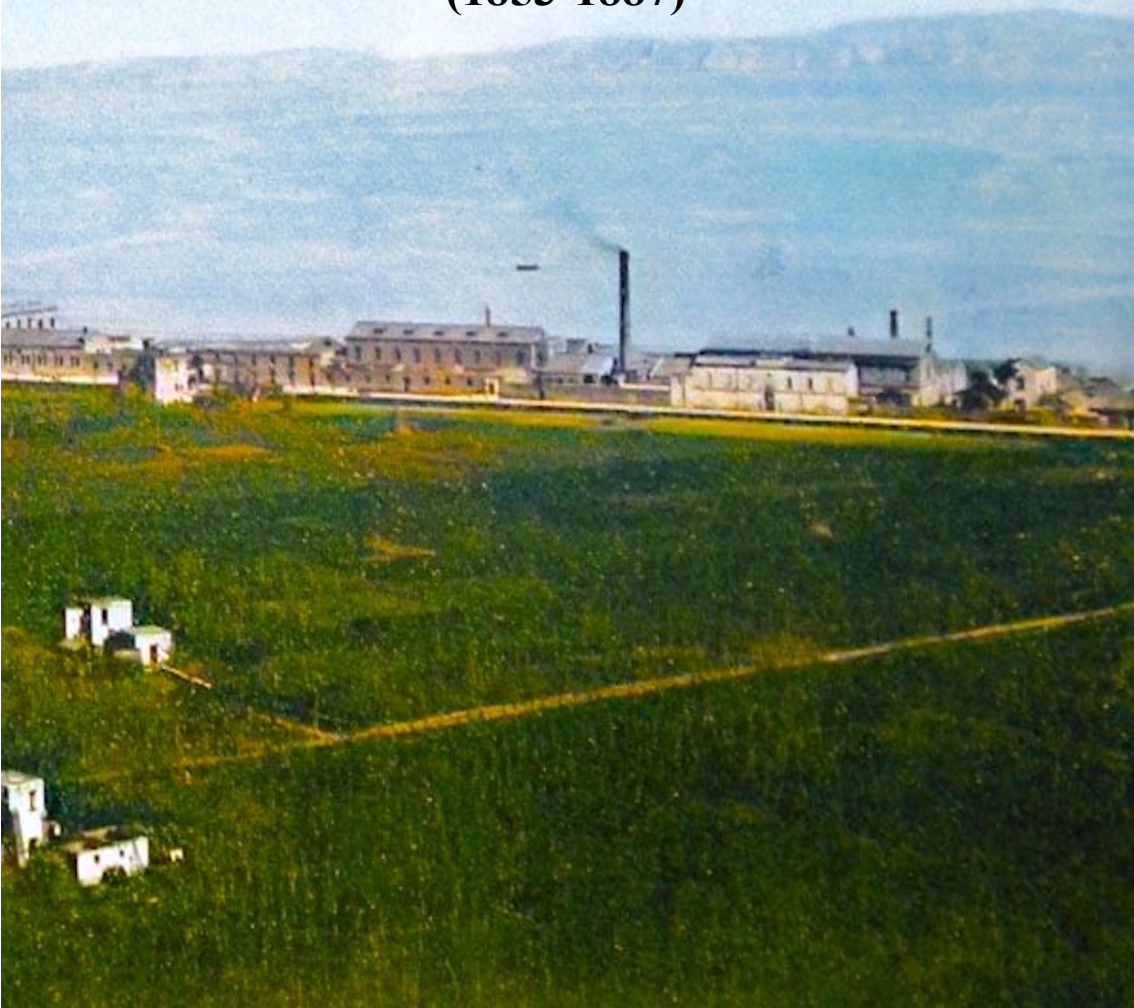
Mario A. Iannaccone

The Lefèbvre Chemical Industry in Bagnoli

The forgotten factory (1853-1887)



The history of chemistry and petrochemicals in southern Italy, in the Bagnoli area - destined to change the entire territory north of Posillipo as far as Pozzuoli - begins with the foundation in 1853 of a very modern chemical factory by decision of Charles Lefèbvre. This book tells its tormented story.

Mario A. Iannaccone

THE LEFÈBVRE CHEMICAL INDUSTRY IN BAGNOLI

THE FORGOTTEN FACTORY

(1853-1887)

Contents

Chapter 1

At the origin of an industrial zone
Charles Lefèbvre in Posillipo

In January 2020, the great, long-delayed reclamation of the Bagnoli industrial site was announced by Italian newspapers and television stations, to remove every ruin or remnant of more than 170 years of chemical processing. If this is the well-known conclusion of the site's industrial history, its beginnings are less well known. We can ask ourselves: why did Bagnoli become an industrial area in the mid-19th century?

It can be said, with good reason, that it was an area that in times of industrial development could naturally offer itself to that destination. It was a flat, free area, now drained of the water that had made it marshy in previous centuries, close to the large expanding city; it was located on a low, sheltered coastline that made it possible to build piers and convenient moorings. Easily reached by crossing the heights that enclose the city to the north, especially Posillipo and Monte Spina. This is true. But it is also true that the industrial destination of that area, especially the village of Coroglio, where, over the years and throughout the 20th century, a large and important industrial settlement would develop, was also the result of a precise choice. A choice made by the French industrialist, transplanted in Naples, Charles Lefèbvre, after 1851, when the political situation in the Kingdom of the Two Sicilies seemed to be calming down again.

Lefèbvre had built up a veritable industrial empire in just a few decades and could boast of being, in the 1848 census, among the Kingdom's three largest tax contributors. A 'billionaire' we would say today; an intelligent, intuitive, adventurous but thoughtful man, interested in putting his money to good use in industry and always in new and modern activities. His role in the history of the Kingdom has not yet been sufficiently studied.

At that time, in the middle of the century, Charles Lefèbvre owned a great deal of land and farms, but above all two paper mills in Isola di Sora (which would become three with his son Ernesto), various properties in Naples, and in neighbouring towns and in Sora; he had important interests in the *steamboat* company called *Amministrazione per la Navigazione a Vapore del Regno delle Due Sicilie*, which had six steamboats. He also had shares and financial positions in the lighting company called the *Società Lionese* in Naples, in the large spinning mill in Sarno run by the *Società Partenopea*, and in *Henry & Macry* industries. Connected to the paper factory was also a large printing works, the *Stamperia del Fibreno* in Naples with a warehouse in Rome, and other real estate and land trading activities.

At that time, at 75 years of age, flanked by a son in his early thirties who was shrewd and an excellent administrator, by then related to one of the most important Neapolitan families, the Doria D'Angri, he felt he could still act. The story of this man, his ability to adapt, his industriousness that continued until a few days before his death in 1858, is astonishing. In 1851, when the King was consolidating his power and preparing to ennoble Lefèbvre, the latter thought of making the most of his business by extending the paper production chain upstream, founding a factory for chemical products used in the

paper industry, in order to have them in abundance, be able to sell them and avoid importing them from abroad, from northern Italy or France.

The Bagnoli plain was very familiar to him. With his family he had frequented the Posillipo hill for years, at various times of the year. In 1834, he had lived there for a year, in the Palazzo Gallo, when his large flat in the Palazzo Partanna, on the side of the Strada di Santa Maria in Cappella, had to be refurbished.[1] Later, for many years, he rented a villa in Posillipo, above the Bagnoli plain. There were many villas for rent at the time. He was also a guest in the large villa of his daughter-in-law Teresa Doria d'Angri, whose father had built a princely building on one side of the Posillipo hill. Over the years, the Lefèbvre's summer residences changed, but they remained faithful to the place, Posillipo, which on the hillside overlooking Bagnoli was clear of buildings.

The hill was much sought after by the rich and the noble, especially the part overlooking Naples. On one side there was the city, the international metropolis trying to modernise; on the other, towards Bagnoli and Pozzuoli, there was tradition, ancient memories, Roman ruins, ancient *baths* and more modern, functioning ones beyond Coroglio. The impressions of visitors of the time are unanimous in considering the area splendid, filled with classical memories.

From reading the diary compiled by a cousin, Andrè-Isidore Lefèbvre (1798-1889), which also contains excerpts from a lost diary of Rosanne Lefèbvre, Charles's wife, we know that the Lefèbvre family accompanied their numerous acquaintances and foreign visitors who arrived punctually each year to visit Fuorigrotta, Pozzuoli, Baia, Miseno and the

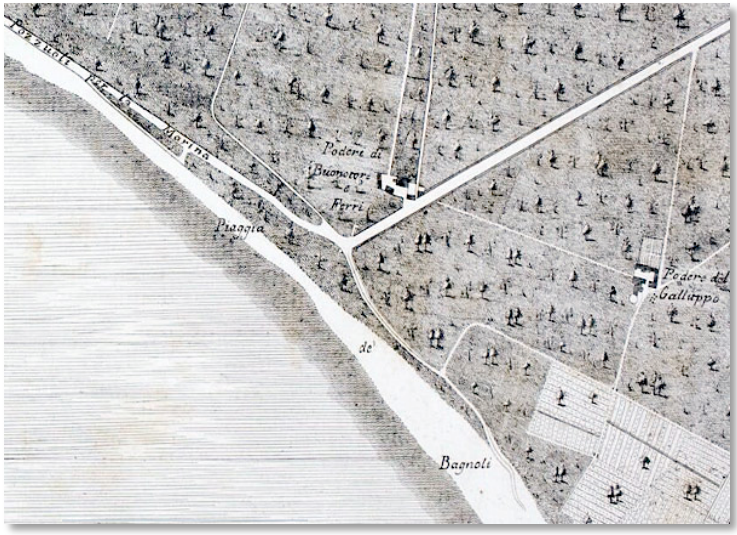
[1] *Manuale del forestiero in Napoli,* Borel e Bemporad, Naples 1854, p. 108.

baths of Bagnoli. The tunnel that connected the Bagnoli area to Naples was also a much sought-after curiosity, intriguing the French visitors and the many relatives that the Lefèbvre family accompanied. Passing through a dark and dusty cave, a real attraction at the time, one arrived after 770 metres over the Posillipo hill, at the sunny countryside, cultivated mostly with vines, a vegetable garden and an orchard. That tunnel had been started in 37 BC and completed by Cocceio Aucto on behalf of Agrippa.

Bagnoli could therefore be reached by land along the road known as *Per Cryptam*, along which there were ancient shrines, sarcophagi and Roman monuments. The alternative was the road called *per colles,* more uncomfortable and winding, which connected the access routes of the villas, and which offered, looking out from the other side, a view of an unspoilt plain, traversed by a straight coastal road, the road to Pozzuoli. This is the route of today's Via Posillipo that continues into Discesa Coroglio, a route along which many historic villas wind their way. Today there are two tunnels that pierce the hill via the route of the ancient Fuorigrotta (Posillipo Tunnel) and a parallel route, the Tunnel of the Quattro Giornate. At that time, however, the route was longer and Bagnoli could be seen as an isolated area.

It was certainly while walking through these places frequented by him and his illustrious guests, amidst the scents of the countryside, the fig trees, the vineyards, the plum orchards, the silence that must have been profound in that area, that Charles Lefèbvre must have had the idea of buying up the entire plain. We do not know why it was not exploited earlier. For sure, we know that until the end of the 18th century it was an area that still had drawbacks, such as marshes. It was intensively cultivated and subdivided into numerous plots, although the ownership was less

divided than it might appear, as we shall see, and therefore the purchase could be done without great complications, at least at first. A detail from the *Mappa geografica della città di Napoli e dei suoi contorni* by Giovanni Carafa Duke of Noja (1715-1768) shows the situation in 1775 or shortly before (the year is that of the map's publication): estates cultivated with fruit trees and olive trees, a few partitions with vegetable gardens and wheat.[2] One can read the names of a few farms, the Podere di Buonocore e Ferri, for example, on which the Chimica Lefèbvre will be built, although 75 years later the tenant family would have changed.



Map of Giovanni Carafa, Duke of Noia dated 1775 (National Archives of Naples). The site of the Chimica Lefèbvre in Bagnoli was still like this in the mid-19th century.

[2] Giovanni Carafa Duca di Noja, a cura di, *Mappa geografica della Città di Napoli e dei suoi contorni*. It was made at the behest of Charles IV, King of Naples, between 1750 and 1775.

However, Charles Lefèbvre decided to buy all the land, at a cost of about 1,000 ducats (we do not yet have the transaction documents, but 20 years earlier, a large portion of the same land had been paid 650 ducats).[3] The factory was to be built there. This, however large, would not change the appearance of the area for decades, which remained agricultural and, for the most part, cultivated. Yet it was the choice of Lefèbvre and the construction of his factory that would determine the fate of the locality.

Above is a painting by Pietro Fabris (1740-1792) depicting the Coroglio plain around 1785. Strangely enough, no agricultural buildings, farms, houses that existed on the coastal road in the early 19th century are visible. It is probably a partly idealised view or the farms were low and could not be

[3] Not being present in the collections of Notarial Deeds in the Naples archives, it is probable that the contract was registered in Sora, with jurisdiction at the Court of Cassino, because the land and then the Lefèbvre Chemist's shop were legally considered part or branch of the Cartiere del Fibreno.

distinguished from the high point, to the north, where the painter had fixed his easel.

It was in 1857 that the vedutist painter Raffaele Smargiassi (1798-1882), an exponent of the Posillipo School, received a commission from Charles Lefèbvre to paint a view of Bagnoli in an oval.[4] The painting, at the moment, seems to be lost, but the news of its existence is significant. Of course, "vedutisti" liked to paint the surroundings of Naples, and views that had the Posillipo hill as their vantage point were particularly appreciated by foreigners, but that commission had a more particular reason. As we know, Charles Lefèbvre had just bought that vast piece of land, making a decision fraught with consequences for centuries to come. With that commission he was celebrating his ownership. By that time, the factory had already been built and almost certainly Smargiassi's painting depicted it.

There is an image that even better 'crystallises' the state of the Coroglio plain at the exact moment when Charles Lefèbvre thought of buying it. It is a beautiful engraving made by the Parisian artist Frédéric Bourgeois de Mercey (1803-1860) in the year 1850 and lithographed by Eugenio Ciceri. The engraving, which remained scarce for a long time, was finally republished together with 11 others by the publisher Grimaldi in 2006.[5] It shows Nisida and its small port.

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[4] *Annali Civili del Regno delle Due Sicilie*, Real Ministero dell'Interno, Naples 1859, vv. 65-67, p. 28.

[5] Bourgeois de Mercey Frédéric - Ciceri Eugenio, *Napoli in bicromia. Dodici rare vedute del 1850 disegnate d'après nature da F. Bourgois de Mercey e litografate da Eugenio Ciceri*, Grimaldi & c. Editori, Naples 2006.

This image possesses a degree of detail absent in any other. One can thus appreciate the fact that the farms on Carafa's 1775 map are exactly the same in the year 1850. It can be seen, still in 1850, that there is no Bournique Glassworks, which was therefore built close to the construction of the Lefèbvre or even at the same time. What is more, one may think that the Bournique Glassworks and the Chimica Lefèbvre shop were connected by more than a cross-over of shares.

In fact, as there was no Bournique 'ownership' of the land, the factory was built on the land purchased by Lefèbvre in 1853. The existence of this glassworks on that site can be explained in one way: the retorts and containers needed for the chemical industry were rare and had to be imported from outside (e.g. from Venice or France) at very high prices. Moreover, they were prone to breakage. The existence of the chemical industry and the glass industry, which were close and shared, could be explained precisely by the need for the containers necessary for the various stages of chemical production, containers which – as we know from other sources – were rare, expensive and difficult to transport.

The fact, then, that the Lefèbvre family had large farms, such as the Masseria di Polvica, in the Neapolitan area, with over 6,000 vine plants, which were sprayed with Lefèbvre Chimica's products (supplies that were in addition to the much larger supplies from the paper mills) makes it clear how these industrialists sought to introduce a truly integrated production cycle.

Bourgeois de Mercey Frédéric and Ciceri Eugenio,
lithograph of the Coroglio plain (1850).

Returning to Bourgeois de Mercey's beautiful image, one notices how on the left the road leading from Posillipo offered a beautiful panoramic view of the plain at a certain point when leaving the villa area. The image depicts some bourgeois or noblemen intent on taking a walk, which became a custom for foreign visitors and Neapolitans.

A detail of the same picture shows the Coroglio estate surrounded by a few rustic buildings and trees. On the right of this building can be seen the area where the Chimica Lefèbvre and Bournique Glassworks were to be built a few years later, still completely cleared of all kinds of artefacts.

Bourgeois de Mercey Frédéric and Ciceri Eugenio,
lithograph of the Coroglio plain, detail (1850).

Preceding any industrial settlement is also a drawing by Luigi Fergola (1768-1835) engraved by Vincenzo Aloja (c. 1770 - 1815), *Veduta de' Bagnoli, e Fuorigrotta preso da sopra Posillipo.* It shows the plain of Bagnoli, to the north, from the Posillipo hill in a section of the road beyond it. The area to the north of the hill, the one furthest from Naples, did not have the concentration of villas and palaces of delight present on the other side.

As the term *ante quem* for dating this view is Fergola's death in 1815, *Veduta de' Bagnoli* can be dated between 1800 and 1815.

View of Bagnoli, and Fuorigrotta taken from above Posillipo.
Vue des Bagnoli, et du dehois de la Grotte prise sur Posilippe (Fergola-Aloja).

Chapter 2

Forgotten pioneers

Architectural historians Silvio de Majo and Augusto Vitale write in a 2014 publication of theirs, dedicated to the site of the City of Science, an institution devoted to popular scientific dissemination, and to the past of the site that hosts it, that the Lefèbvre 'great chemical factory' was 'little known and neglected by not many historians of the Italian chemical industry'. The authors' observation is correct: this serious omission, or let's call it neglect, on the part of many historians has meant that Lefèbvre has been mentioned very few times, with scanty information, thus neglecting the historical importance of the structure, its novelty, the impact it had on the economy of post-unification Naples or on the technical-scientific community of the time; an impact that, thanks to the work of its French director, was, as we shall see, considerable.

The Lefèbvre plant in Bagnoli is a 'factory which, to all intents and purposes, must be considered among the pioneering enterprises on the peninsula, even before it dedicated itself to the production of fertilisers and pesticides, i.e. the type of production which, in a predominantly agricultural country like Italy, could not fail to characterise the first national chemical industry'.[6] It was not converted to fertiliser production until after the Lefèbvre period.

[6] Silvio de Majo - Augusto Vitale, *Alle radici della città della scienza. La fabbrica chimica di Bagnoli. 1854-1900*, Marsilio, Venice 2014, p. 29.

In fact, there are several phases in this history: the initial period, from 1854 to 1887 or 1888; the second, better known because it is more documented, when it was sold by the original owners and became the fertiliser factory of the American Arthur Walter (duration of the company: 1888?-1905). With one clarification: the exact boundary between the two properties has not yet been established. On the contrary, it is likely that Walter's business started after 1888, contrary to what is commonly written: this is no small detail. Walter's company was managed brilliantly and with innovative methods, with advertising, conferences, a discount system - thus with 'American' marketing. It had a remarkable development because it produced copper sulphate, an effective remedy against the peronospera infection that did so much damage to the Italian wine industry between 1888 and 1893.

Walter and partners sold the facility in 1905 to Unione Concimi under which the third phase took place. In 1920, Unione Concimi (1905-1920) ran into difficulties for various reasons that are not worth mentioning here and sold to the company that was on its way to becoming Montecatini.

The fourth phase is complex and involves Ilva and Montecatini who made major investments on the site. They expanded their plants, creating a veritable petrochemical pole from the original ones. This phase, after a period of crisis and divestments, lasted until 1993. A final, non-productive phase concerns the Città della Scienza, in whose fire in 2013 much of the archive of the first factories, and much of the Montecatini archive, was destroyed. This paper is dedicated to the first phase only.

The deed of incorporation of the first company, in 1853, the construction plans and the exact list of machinery and fixed

assets present in that year are, at the moment, untraceable; they may be found among the uncatalogued material deposited in the Naples State Archives.[7] In fact, the original archive, the Historical Archive of Montecatini, first kept at Ilva's headquarters and then at the Città della Scienza foundation, survived the fire of 2013 and in 2016, after two years of storage at the headquarters of the Sopraintendenza of Naples, it was moved to the State Archives of Naples, in a still uncatalogued fund that groups together the documents of the Città della Scienza.

It is still not known whether this fund holds copies of the memorandum of association of the company set up by Charles Lefèbvre, the original plans of the factory and the deeds of purchase of chemical plants, as well as other documentation testifying to the type of agreement between the factory director Charles Déperais and the owners. It is probable that these materials are kept partly in the Frosinone Archives and partly in the Caserta Archives, which received, after the Second World War, the notarial and civil archives relating to the ancient district of Terra di Lavoro and Sora, where the Cartiere del Fibreno property was located.

Perhaps due in part to this scarcity of information and the fact that the Fabbrica Lefèbvre was later incorporated into later factories, from Walter to Ilva, historians have not investigated. There is a deed of sale from 1887, however, which documents the temporary management of the factory by Pietro della Porta, Duke of Civitella, while the date of the transfer between the Lefèbvre and Walter ownership is uncertain. If it took place in 1887, documentary evidence is currently lacking. The oldest

[7] The material has been inaccessible since 2013. It still awaits reconnaissance and cataloguing in 2020.

reliable mention of the factory dates back to 1890 in the *Bollettino della società italiana dei viticoltori italiani*.[8] Walter & C. was already fully active and well known and therefore its activity may have begun in the years immediately preceding 1888, for example.

This raises interesting questions about an important and futuristic project that was being attempted in those months on the Bagnoli plain by the English architect Lamont Young (1851-1929), a project that was later not realised. In any case, many years after those lines were written by historians De Majo and Vitale, the situation has not changed: this factory, which was pioneering and unique in the industrial panorama not only of the Bourbon Kingdom and the south, but of the entire Peninsula, together with a factory in Turin, is still little studied, always cited with the same meagre data that is referred to from one book to another. Yet it was a large, modern factory, run by a person of international prestige, Charles Déperais. If, in recent decades, it has returned, at least sporadically, to the memory of historiography and journalism, it is because its walls housed the Bagnoli Città della Scienza, a museum and meeting place set up in 1993, which unfortunately went up in smoke, as mentioned above, following an act of arson in 2013 and was reborn in subsequent years but mutilated of an important archival and documentary heritage.

The volume of Città della Scienza is that of the old Lefèbvre factory, albeit enlarged by later interventions, and the photographs that bear witness to the drama of the fire concern the old building itself, whose load-bearing walls had been recovered for scientific exhibitions. Therefore, telling the story

[8] *Bollettino della società italiana dei viticoltori italiani*. 1890, p. 171.

of the Bagnoli factory that belonged to the Lefèbvre family means telling a very important piece of the origins of Italian industrialisation.

Regarding the fire, the authors write, it 'destroyed an important part of the museum and above all the oldest pavilions, dating back to the mid 19th century, the result of the innovative industrial initiative in the chemical field by foreign entrepreneurs who had anticipated the Italian industrial enterprises in the sector and many other factories that had sprung up to the east and west of the city of Naples'. So, the original structures of Chimica Lefèbvre, especially the wooden structures, were only irreparably destroyed in 2013. Again: 'the erroneous identification of the gabbrica with a 'glassworks', as has often been done by the press and much quality publicity [...] has prevented people from realising [...] that it was instead a large chemical plant, the oldest in the entire Mezzogiorno if not one of the first in Italy'.[9]

[9] Silvio de Majo - Augusto Vitale, *op. cit*, p. 107.

Chapter 3

The chemical industry in the south and in Italy in the middle of the century

At the end of the 1850s, chemical industries of a considerable size still did not exist in Italy with a few exceptions, one in the north (in Turin) and one in the south (Lefèbvre). In this field, not only the south, but the entire Peninsula shows a certain backwardness that can be explained by its prevalent agricultural and artisan vocation. There are workshops producing sulphuric acid, which is used in many processes; workshops producing caustic soda, paints and various products for pharmaceutical use, which require modestly sized and inexpensive plants.

A sign of revival in the chemical industry came with the first production of sulphuric acid, dyes and glass. A serious and wide-ranging history of the Italian chemical industry has not yet been tackled by any scholars and even international contributions, such as *The Chemical Industry in Europe* (Springer, 2002), offer few insights and deal almost exclusively with the chemical industry after 1880, completely ignoring Bagnoli's Chimica Lefèbvre, not because of any desire to do so but because of a lack of information and difficulties in accessing it.[10]

[10] Paolo Amat di San Filippo, The *Italian Chemical industry*, in *The Chemical Industry in Europe: Industrial Growth Pollution and Professionalisation,* ed. Ernst Homburg - Anton S. Travis - Harmt G. Schröter*,* Springer 1998, pp. 46-57.

The first pioneering activities took place in Lombardy, Veneto and Piedmont already around 1830, often using foreign patents: but these were almost always small laboratories, certainly not industries. A description of the state of Italian chemical industries is given by Professor Silvestro Zinno in his paper *Sulle possibili industrie chimiche nazionali* published in the Atti del Reale Istituto di Incoraggiamento (*Royal Institute of Encouragement*) di Napoli in 1871, a text from which the following statements and news will be quoted.[11]

He complained about an attitude of foreignophilia in Italy which, Zinno insisted, was damaging to domestic industries and also to chemical industries. He argued that in Italy, and especially in Naples and Sicily, there was the 'prejudice' of disregarding national productions which, however, 'are not inferior to foreign ones'. Yet there is a 'craving' to always accept foreign productions as those are believed to be the most perfect and the most valuable'. The issue, Zinno wrote, is even more painful if one thinks that 'such products exist in the soil of our beautiful country, and therefore they are either ignored or held in contempt'. So, he continued, 'foreigners take advantage of it' who extract them, process them in their own workshops and 'send them back to us, making us pay a very high price for them, as foreign products that are therefore perfect to common feeling, and therefore very valuable'.

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[11] *Sulle possibili industrie chimiche nazionali,* published in the Atti del Reale Istituto di Incoraggiamento alle Scienze Naturali, Economiche e Tecnologiche di Napoli, II s. t. VIII, Nobile 1871, v. 21-22, Naples 1871-1872. Active until the end of the century, Silvestro Zinno would distinguish himself for many important publications on the chemical dynamics of Vesuvius, on the nature and formation of ozone and on many issues relating mainly to industrial chemistry.

The allusion here is to sulphur and its derivatives, which were present in large quantities in Sicily and had caused tension for decades with the British government, which exploited them by paying a very low rent to the Kingdom. There had also been a risk of armed conflict, fifteen years earlier, the so-called Sulphur War. (1840). Sulphuric acid and its derivative salts (sulphates) or sulphur anhydrite solutions (oleum, vitriol), were products used in numerous processes and various industries and the raw material was sulphur.

It should be said that it took a foreigner, albeit a Neapolitan by action, to try to change this state of affairs. The planned factory would have handled precisely the products mentioned by Zinno, and in considerable quantities. On the other hand, the expert – and not only he, as we shall see – denounced how that factory was isolated and almost unique, surrounded by considerable ignorance about chemistry. He also denounced the lack of 'technical education in Italy, the little or superficial study that is made of chemistry, the little encouragement and the very little reward given to those who profess it'. What was lacking at the time, he explained, was 'a large chemistry laboratory to undertake indispensable research, to carry out preparations in an industrial system in order to convince the capitalist of the success of the undertaking that could be carried out here'. And this 'makes it painful to see men very well versed in the study of chemistry abandon these in order to undertake common trades'.

The Fabbrica Lefèbvre had in Déperais a director who boasted international recognition and was considered a talented chemical engineer, inventor and experimenter. For this reason, it was an absolute exception. Lacking adequate higher or university education and laboratories in which to practice and develop processes, industrial chemistry lacked

capital. Hence the scarcity of men 'capable of directing chemical factories, who therefore can only be trained outside their homeland, where they find large factories and large chemical laboratories of industrial application'. For this reason, he lamented, 'if our few industries are small and infantile for the aforementioned reasons, it follows that they cannot exhibit their products at the price offered by foreign products, which are prepared on a large scale with economic methods, and more or less arranged in large factories, can rightly be exhibited in commerce at a lower price; and so our factories fail, which by chance begin, even if only perfectly, their industrial career, and so there is discouragement, and finally misery! For Zinno, it was therefore necessary to start with professionalism, with the training of capable chemists such as the director of Lefèbvre, Charles Déperais.

Chemical education in Italy in the 19th century

In fact, Zinno's polemic seems to be directed more at the scarcity of chemical education – which existed in many universities and special schools – than at the scarcity of teaching aimed at industrial application. It is also likely that the majority of chemists, in a country that was still scarcely industrialised, turned to the teaching of experimental chemistry aimed at the advancement of science, but not at its industrial applications.

There was a degree course in Chemical-Physical Sciences at the University of Pisa, a Pharmacy course at the University of Pavia, and Pharmaceutical and Toxicological Chemistry at the University of Bologna. There were excellent training

institutes, such as the Reale Istituto Tecnico Carlo Cattaneo in Milan (founded 1862) or the Regio Istituto in Rome.

Some of the first professors, such as Raffaele Piria (1814-1865), trained in Paris at the school of Jean-Baptiste Dumas or in Vienna. Piria taught in Pisa, then in Turin and set up his own public school in Naples in 1839.

The Scuola di Chimica della Società d'Incoraggiamento had various locations, although these schools had obvious limitations: they did not have, except in a very rudimentary form, laboratories in which students could practise. Their activities consisted mainly of lectures and classes, some of which were of a high standard but with little, if any, opportunity to experiment.

In the pre-unification period, university chemistry chairs were founded in Turin, Messina, Milan, Parma, Padua, Naples, Modena, Rome, Bologna, Palermo, Pavia, Catania, Genoa and other cities. In Milan and Turin there were also Istituti Tecnici Superiori (later called Politecnici) and all were equipped with chemical laboratories but, in Zinno's opinion, in 1871 they were clearly insufficient because they dealt with experimental and not applied chemistry.

It is clear from the dates that the great change took place after 1880 and many factories were founded or consolidated in that decade, also driven by agricultural development that required large quantities of fertilisers. The case of the Bagnoli plant is all the more remarkable, also from a historical point of view.

Chapter 4

The chemical industries in Italy at the time of the Bagnoli Lefèbvre

Bagnoli's industry was even more exceptional because the capital that had set it up came from Naples and those who had wanted it had done everything possible to make it work with the best equipment, in a large and modern structure, with access to the sea that at least solved the problem of an easy supply of raw material coming largely from the solfataras of Sicily. Zinno believed in private initiative but also hoped for encouragement of national industry through government initiative and the Reale Istituto d'Incoraggiamento in Naples was committed to this. It reviewed the main products that could be developed in Italy thanks to the raw materials found on Italian soil, such as sulphuric acid (and derivatives), carbon disulphide, ammonia, potash, soda, sulphates, nitrates, sulphites and others. As for sulphuric acid, there were many but small factories for it.

To fully appreciate the courage of Charles Lefèbvre and his son Ernesto, one must consider the state of the Italian chemical industry in the pre-unification period and in the 30 years that followed, i.e. during the life of the first factory.[12]

There was a sulphuric acid factory in Catania, set up by Michele Mirone, which was closed in 1838 because of the difficulty, indeed impossibility, of finding glass crocks on the

[12] See *La chimica italiana,* CNR, Padua 2008, ed. Gianfranco Scorrano.

local market that would not break: precisely the sort of inconvenience that was probably solved by Lefèbvre by setting up a glassworks alongside the chemical factory. A certain Giacomo Power was the owner in Messina (around 1831) of a citric, tartaric and sulphuric acid factory that was closed in 1839. The refinery of Amato Taix, an importer and exporter of sulphur, was sold to a Palermo man and closed in 1842. Another factory was set up in Palermo by Beniamino Ingham, Vincenzo Florio & Francesco Agostino Porry – also partners in the Marsala wine export business – which lasted until 1842, but at a loss, and then in another corporate form until 1860.[13] The losses were due to the war and other non-market-related reasons, because the demand for sulphuric acid was growing so much that too many factories were opened, for example in Marseilles, creating overproduction.[14]

A plant was operating in Palermo at Montepellegrino (5,000 quintals per year). Another factory stood in Turin, in Borgo Dora, and was probably the largest in Italy at that time. It belonged to the family of Count Sclopis, had been founded in 1812 and enjoyed many privileges and royal patents, being the official supplier to the army and industries that were run by the Savoy State. In 1832 it employed 200 people. Its 50,000 square metres produced sulphuric acid, nitric acid, soda ash, ammonia and sulphate of copper, iron and magnesium. After 1839, it also had a mining concession that allowed it to produce sulphuric acid from its own ores.

Sclopis was absorbed in 1931 by Montecatini, which later divested it. Another factory in Turin was that of Giovan

[13] Orazio Cancila, *Storia dell'industria in Sicilia*, Laterza, Bari-Rome, 1995, pp. 30-33.
[14] *Ibid, passim.*

Battista Schiapparelli (1795-1873) which, like Lefèbvre in Bagnoli, was mainly dedicated to the production of sulphuric acid, iron sulphate and alum. It was founded in 1824 and expanded in 1829. It was, however, a small factory. A large factory was not created by the Schiapparelli family until 1907.

After running a small pharmaceutical laboratory in 1865, Carlo Erba (1811-1888) founded a larger one in Milan, but it was a pharmaceutical chemistry plant (with over 100 employees) and not an industrial chemistry plant: the distinction between the two became increasingly clear. Aimed at producing substances useful to industry was the factory of Antonio Candiano (1830-1910) and Antonio Biffi (1831-1908) in Borgo San Vincenzo in Prato in Milan. The Milanese factory had been established for some years but was very small. Candiano and Biffi (who had studied together at the School of Pharmacy in Pavia) together enlarged it from 1862. It was very small, as mentioned, housed in the space of an old basilica that had been deconsecrated at the time of Napoleon, the San Vincenzo al Prato: the bell tower had been converted into a chimney. Not exactly a suitable building, but spacious nonetheless.

Candiano and Biffi were mainly dedicated to the production of dyes. In 1882, the two separated, founding Biffi a factory with a plant in Via Tortona, and Candiani a large factory in Bovisa, which after a few years reached 11,000 square metres of lead chambers. Another one stood in Genoa Sanpierdarena and was run by Mr. Francesco Bardin: it produced 1,100 quintals of sulphuric acid per year (about one tenth of Lefèbvre's) and 250 quintals of nitric acid (sic) i.e. nitric acid.

There were two other factories in Genoa, a pharmaceutical chemical factory producing quinine, Dufour (quinine sulphate) and another larger one, owned by the Piccardo brothers, which

produced saltpetre (300 quintals of potash sulphate, 1,700 of nitro, 800 of soda ash and 300 quintals of soda crystals).

The Neapolitan factory, despite its lower number of employees compared to Sclopis' factory in Turin, had state-of-the-art equipment and higher productivity. It could produce around 13,000 quintals per year of sulphuric acid in different varieties. According to Zinno's calculation, the industries of united Italy could have had, with some state incentives, an annual requirement of 100,000/120,000 quintals of sulphuric acid.

In this case, the Lefèbvre factory could have guaranteed 10% of national production. In fact, it never worked at full capacity except during periods when a particular substance against cholera was in demand, as we shall see; and in any case it satisfied a large part of the demand from the south and part of that from northern Italy.[15] Zinno praised Carlo Déperais' production system and illustrated it by showing the apparatus invented by him for the production of carbon sulphide.[16]

[15] Sylvester Zinno, *Atti dell'Istituto di Incoraggiamento*, pp. 52-53.
[16] *Ibid*, p. 60.

Chapter 5

The visit of Alessandro Betocchi

About three years after Zinno's report, Professor Alessandro Betocchi (1843-1909), an engineer and director of the Permanent Statistical Office of the Naples Chamber of Commerce, published his two-volume *Forze produttive della provincia di Napoli* in which he attempted to provide a precise descriptive picture of the industries, handicrafts and agriculture in the Neapolitan area about ten years after the Unification of Italy.[17] The work is also accompanied by tables indicating, for many factories, production capacity, workers' wages, patents, and the modernity or antiquity of the plants.

It is one of the most comprehensive works on the state of the southern economy at that time. In one chapter, brief by necessity, he dwells precisely on the chemical industries and particularly on the Lefèbvre 'de' Bagnoli' plant because of its absolute pre-eminence in the panorama of southern Italy, but also nationally. In fact, along with praise for the initiative of the courageous industrialists, Betocchi, like Zinno, expressed concern.

First of all, Betocchi was enthusiastic about that plant, which was unique in the region and deserved special consideration compared to other 'modest laboratories' in the area. For him too, chemical production was a sure indicator of the state of

[17] Alessandro Betocchi, *Forze produttive della provincia di Napoli,* Naples, Stabilimento tipografico Gennaro de Angelis, Naples 1874, pp. 276-277.

health of an economy: 'chemical factories are not only a wealth in themselves, but because they constitute the most powerful auxiliary of many other industries; so that the more the number of these multiplies, the more all other processes will benefit; not only because the new factories will perhaps be able to manufacture certain special products, for which we are nevertheless indebted to foreigners, but because those same products, which are already produced in the country, will be able to be sold at the fairest price by virtue of free competition'.

There was therefore a double issue: that chemical products favoured the emergence of other industries, which often found it unprofitable to set up precisely because of the scarcity of chemical products needed for the most varied processes, which had to be imported from abroad at a very high price. And those that used them had to pay very high prices for both domestic and imported products.

The primary establishment I refer to is the one nicknamed de' Bagnoli, a name that comes from the beach on which it is located. It is an immense building, divided into several compartments, each of which is dedicated to various processes. There are three furnaces, one to calcine and one to burn sulphur, a steam machine, and it is full of pumps, apparatuses, lead chambers, vats and caissons for crystallisation. It is owned by that Ernesto Lefèbvre, Count of Balzorano, to whom the Sora wallpaper factory belongs, and which was mentioned earlier.[18] The factory was established in 1853, and, given the little development that had previously taken place in the industries supported by chemical products, it had a troubled existence at first. Now, the manufacture of alcohol, garanzine, stearic acid and all artificial sulphates has enabled the factory to

[18] In another part of the book, Alessandro Betocchi focuses on the San Carlo wallpaper factory, which boasted a production quality of international significance at that time.

produce on a large scale [...] And therefore with greater advantage; and by a happy reciprocity, the prosperity of the chemical factory has been useful to the factories that depend on it. The Bagnoli factory produces sulphuric acid at 50, 50 or 66; it also produces alum and iron sulphate.[19]

Most of the raw materials were purchased in the surrounding area: these were aluminous earth and the so-called ferrazza (iron-rich earth) as well as sulphur in Sicily. The sulphur industry was very flourishing, as this mineral was very abundant in the area.

Thus 'the production obtained in Bagnoli serves to feed the factories in our province and neighbouring provinces: a small amount is exported to Italy and Sicily, none is sent abroad'. At the time of Betocchi's visit, the factory had 24 workers employed at good wages, plus transport workers and various external activities that made up the allied industries. There was also Déperais who lived in a house next to the factory.

[19] Alessandro Betocchi, *op. cit.* p. 277-278.

The Lefèbvre factory was the largest industrial chemical plant in the Mezzogiorno and one of the first in Italy (picture postcard from around 1920 after the transfer of ownership from Unione Concimi to Ilva).

At the beginning of the 1870s, the Lefèbvre factory, which was a specialised branch of the Cartiere del Fibreno, was a building about 180 metres long, running along the coastal road to Pozzuoli, surrounded by a wall that formed a large courtyard. It was an example of a large Italian plant, the largest for several years together with the Sclopis in Turin. It also represented, for those who had wanted it – Charles and Ernesto Lefèbvre – great confidence for the future of industrial development in the Neapolitan area.

Italy's largest chemical industries would emerge years later in both the petrochemical and pharmaceutical sectors. In Italy, the Azienda Coloranti Nazionali e Affini (ACNA) in Cengio was founded on 26 March 1882 in Saliceto, on the Bormida river (Liguria), to produce dynamite and later sulphuric acid,

oleum and tritol. In Naples, A. Menarini Industrie Farmaceutiche Italiane, but only in 1886.

In both cases, as can be seen, these experiences are not comparable with the Chimica Lefèbvre, for which a special, modern, large building was constructed and completed in 1860, specialising in the production of chemicals for the textile and paper industry Moreover, from the establishment of the Lefèbvre Chemical Factory to the birth of the other companies, more than 20 years passed in one case and almost 30 in the other. In these sectors, Italy lagged far behind England, France and Germany.

It is interesting to note that Betocchi mentions the troubled life of the factory in its early years: we do not know whether he knew or was unaware that much of that trouble was due to a claim by the State to get back the land on which the factory itself had been built, and which had been duly purchased in 1853. Although we cannot quantify how much it damaged the industry, we can think that the threat, repeated in several sentences, to demolish infrastructure and the building itself was not insignificant.

We will return to this.

Chapter 6

The birth of the Officine Chimiche Lefèbvre

Let us see in detail how the establishment of such a factory came about. The decision to set up a chemical industry was taken by Charles Lefèbvre together with his son Ernesto in the last years of the former's life. The first act was the purchase, on 22 April 1854, of 'the entire beach of Bagnoli that from Monte dei Sassi reaches all the way down to Monte Coroglio', i.e. about a kilometre of sandy shore and a strip no less than 300 metres inland. The site, then deserted and partly cultivated, was close to the small farming village of Bagnoli. The land, hitherto destined for agricultural use, was purchased by Tommaso de Franco and Giuseppe Jauch.

The construction of the building, or rather of the buildings considering the service structures, took place quickly and so did the arrangement of the works and infrastructures that were to serve the modern factory, the most modern in the south, as was immediately recognised by observers. Melchiorre Bournique's glassworks and Vincenzo Damiani's glassworks already existed on the site or were built at the same time, in the same year 1853, which essentially manufactured glass for windows and later for railway carriages. The glassworks appear to be separate and of the former, located 'on the beach at Bagnoli', the Lefèbvre appear to have been partners since 1853.[20] Deciphering the cadastral maps and rare photographs

[20] This glassworks is little known, although it is often mentioned. In some cases the documents mention the name of another partner, see

between 1853 and 1896, we can reasonably assume that the Bournique-Damiani-Lefèbvre was about two hundred metres away from the chemical factory, much further towards the village of Bagnoli.

The construction of the factory did not change the appearance of the plain, which until the end of the 19th century retained the characteristics that had given it its name, *balneolum,* as seen in the first picture in this book (page 11). Few houses and two prevalent types of activity remained on the plain: agriculture, made possible thanks to land reclamation, with farmhouses and rustic estates, and the tourist activity made possible by the natural springs, the thermal baths and the bathing lidos that had been built along the Coroglio beach. It was especially after 1905, with the purchase of ILVA, that the area changed profoundly. The new factory took advantage of the concessions of the Special Law for the Risorgimento in Naples of 1905.

The designer of the factory was a brilliant and volcanic character, the aforementioned Charles Déperais, an inventor of chemical processes, equipment and tireless experimenter. From the very beginning, he appeared as the true *dominus* of

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Barbara Bertoli, *Le utopie smarrite della Bagnoli jungle nella rappresentazione delle arti visive*, in *La città altra*, curr. Francesca Capano-Maria Ines Pascariello-Massimo Visone, Federico II University press, Naples 2018, pp. 959-969. Ibid, p. 960. The Archivio di Stato in Naples contain the file of a trial called: *Processo penale a carico di Bournique Carlo, De Rosa Pasquale, Riccio Giuseppe per correità in frode (in fornitura di lastre) in danno di Amm. Ferrovie di Stato*, anno *1917*. There is no further news of this company thereafter. However, the association with the Lefèbvre had been concluded since 1888.

the factory, a director who was given great freedom of movement and who could certainly experiment and use the equipment for his own research.

For this reason, as Betocchi had noted, he called himself 'the founder' of the factory. He only said this because he had designed it entirely, even though the Lefèbvre family owned it. The latter engaged in costly legal battles against the Demanio who wanted the land back, which was also regularly purchased, legal battles in which Déperais' name was not mentioned. The Lefèbvre family, first Charles (who died in 1858) and then his son, for the next twenty years gave Déperais considerable freedom: they knew him capable and showed a very modern attitude of delegation. We have already read Betocchi's description:

> It is an immense building, divided into several compartments, each of which is dedicated to various processes. There are three furnaces, one to calcine and one to burn sulphur, a steam machine, and it is full of pumps, apparatuses, lead chambers, vats and caissons for crystallisation.

Certainly 'immense' refers to the time when industrial plants were small, but evidently this plant was quite large and therefore the 180 metres in length (and something more) that appear in some sources are entirely credible and, moreover, can be confirmed by examining the maps.

The 'calcining' kiln produced sulphites and other calcinable substances, the sulphur-burning kiln was for the production of sulphur-derived acids. A filtering system channelled the dangerous vapours towards a tall chimney, the first ever built in the Bagnoli area and among the first, certainly, in Naples along with that of the gasometer at Chiaia. From this albeit

meagre description, it is clear how well organised the factory must have been and how the work was divided into various 'compartments'.

A great deal of experimentation took place at the factory and some processes, which later became widespread, were first implemented here. For example, on 28 May 1868, Déperais, based on an idea by M. Thomas, patented a spherical boiler and a method for extracting sulphur from its earthy ores by immersing them in a solution of the then expensive calcium chloride at 120 degrees centigrade. But the resulting product of a complex process had such a high-end price that Déperais abandoned the project and gave up his patent. The experiments that Déperais proved to have carried out in the factory, often without making a profit but out of pure experimental interest, made the Chimica Lefèbvre the only facility in which chemistry could also be practised for didactic-experimental purposes, albeit for the benefit of one person, Déperais himself.

Later, however, in 1881, the idea of the French-Neapolitan chemist, who always made his proposals and discoveries public, was taken up and improved upon by the De La Tour Dubreil brothers when it became cheaper to procure calcium chloride. It is likely that Déperais also took up the idea at that point in the Bagnoli factory, because he wrote about it in le *Génie Civil* and in the *Atti del Reale Istituto di Incoraggiamento*.[21]

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[21] *Bollettino Industriale del Regno d'Italia*, v. 5, 1868, p. 189; *Lettre de Ch Déperais*, *Ingénieur des Arts et manifacures à Naples*, Le Genie Civil, III, no. 18, 15 julliet 1883, p. 456; cf. *Annales Industrielles,* XVI, 1884, t. I, pp. 241-244; Charles Déperais, *Brevi cenni sui metodi di estrazione dello zolfo da' ore terrosi*, Atti Accademia del Reale Istituto d'Incoraggiamento di Napoli, v. I, serie 3, no. 16, 1882. pp. 1-4.

In 1883 and 1895, evidence of the importance of the procedure initiated by Déperais at the Lefèbvre in Bagnoli emerged in an issue of *Scientific American* in which, describing sulphur extraction, the advances introduced by Déperais and the De La Tour Dubreil were cited.[22] Even clearer is the *Manual of Chemical Technology* written by Rudolph von Wagner and published in 1895, which describes Déperais's procedure 'developed in practice' at Lefèbvre and which had then been improved in France and remained, according to the manual, the state of the art at the time for the effective extraction of sulphur from sulphurous soils.[23] With all the difficulties suffered, the Bagnoli factory had nevertheless left its mark.

In the documentation we have of the Lefèbvre family, the factory does not appear much. From the care with which they defended it in legal battles, it was clear that they cared about it: the purchase of the land, the building, the installations, the collaboration of Déperais itself must have cost a lot. The Lefèbvre bet was born in the Bourbon and pre-unification period when sulphur produced in Sicily was a real monopoly. Betting on products derived from sulphur extracted in large quantities from Sicilian sulphur mines, either pure or in sulphurous soils, was a winning bet, at least on paper. In the 1830s, exports of sulphur to foreign countries were worth 1,6712,500 ducats. Sicilian sulphur, which constituted almost all that was available in Europe, could be purchased from the Bagnoli plant at an excellent price. It arrived stowed in bales and cakes on cargo ships that left mainly from the ports of Licata, Girgenti and Terranova to the detriment of Messina and

[22] *The Extraction of Sulphur*, Scientific American Supplement, No. 436, 10 May 1884, vol. XVII, Munn & Co., New York, p. 6952.
[23] Rudolph von Wagner, *Manual of Chemical Technology*, New York 1895, p. 245.

Palermo, cut off from the sulphur routes. Inventing procedures to make extraction more effective and economical was therefore very important and, in addition, sulphuric acid and other derivatives had an enormous potential market because there was no factory in the whole of central and southern Italy that could compete with Lefèbvre. As we shall see, these premises did not have the positive outcome hoped for, not for long however, and only in an intermediate phase (around the 1870s), due not to the factory itself but to the unforeseeable impoverishment of the Neapolitan industry, which had previously shown signs of vitality and expansion; another cause was certainly the replacement of sulphuric acid with other preparations and substances, such as pyrites, the use of which had been experimented with by the English companies when they had had to escape the French company's momentary monopoly.[24]

By the time industrialism became strongly established, especially in the north, factories had sprung up that made it less convenient to transport sulphuric acid from Naples. Large sulphuric acid plants had sprung up in Turin, for example, as well as in Genoa and Milan. The conversion of the plant to fertiliser production became, at a certain point, almost obligatory.

[24] Orazio Cancilia, *Storia dell'industria in Sicilia,* Laterza, Bari-Roma 1995, pp. 22-45.

Chapter 7

Charles-Alexandre Déperais

At this point, it is worth focusing on the figure of Charles-Alexandre Déperais, one of the protagonists of this story. He was born in Paris on 8 July 1820 to Victor Romeo Déperais (who died in Naples in 1854) and the Englishwoman Louise Mac Sheeley, daughter in turn of an Irish nobleman who had been one of the physicians of Louis XV and Louis XVI.

The family had moved to Naples in the late second or early third decade of the 19th century: Charles' last sister, Amélie-Henriette, was born in Naples in 1833.[25] However, Charles remained in Paris where he completed all his studies at the prestigious technical school, in fact a polytechnic university, called École Centrale.

Upon arriving in Naples in 1851, Charles Déperais set up his own workshop in Naples on Piedigrotta Street No. 20. He would work in Naples for most of his life while still maintaining business, contacts and interests in Paris. A member of important Neapolitan scientific institutions, he was also a correspondent of the journal *Le Génie Civil* and a corresponding member of the Societé des Ingenenieus Civils in Paris.[26]

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[25] I draw this information and others from Tommaso Dore, *Il mummificatore. Le invenzioni del chimico Déperais a Napoli al tempo del colera*, Italus 2017.

[26] *Mémoires compte-rendu des travaux de la Societè des ingenieus Civils*, Bourdier, Paris 1865, p. 14.

Déperais married, around 1850, Pauline Achard (born in Marseilles in 1830), the daughter of a varnished leather manufacturer who had moved to Naples in 1831, enriching the rich French colony made up largely of Lyonnais, Marseilles and Parisians, a colony of which the people who would entrust him with the factory in the middle of the century were illustrious members. Charles and Pauline had six children.

One of his cousins, Giulia Achard, married Antonio Scialoja (1817-1877), one of the most important Neapolitan anti-Bourbon economists and Minister of Finance in Garibaldi's provisional government.

The prestigious École Centrale in Paris where Charles Déperais trained.

Considering his remarkable preparation, Charles and Ernesto Lefèbvre chose him as designer and director of the factory they wanted to found in Bagnoli. As it had always done for other ventures, this family of French entrepreneurs, transplanted to Naples in 1808, selected an excellent French technician, trained in Paris and maintaining continuous contact with the mother country. In addition, Déperais was perfectly bilingual, which helped. The production of chemicals was viewed with suspicion by the population because of effluents and possible dangers, and in fact other Frenchmen who had dealt with chemicals, such as the 'Lyonnais' of the lighting company in its first configuration, had had to abandon their business precisely because they did not know how to deal with the locals.

We do not know the exact terms of the agreement or how they met, but they frequented the same circles and we can therefore consider that meeting almost fatal. In 1854, therefore, he began his adventure with the Bagnoli factory', placed in a management role that he held for over 30 years, until it was closed down between 1887 and 1888. In 1869, Déperais also held the position of assayer chemist at the Naples City Hall, appointed to choose preparations and solutions to solve the most diverse problems. He also claimed to have collaborated with other large chemical industries outside Naples, but never specified which ones.

Although active in the last decade of his life, Déperais did not work with the new management, which specialised in organic chemistry and fertiliser production. Probably Arthur Walter, an experienced chemist, did not need a production manager.

Portrait of Charles Déperais, anonymous.
Brandt Civitavecchia Collection.

Chapter 8

The buildings of the Lefèbvre of Bagnoli

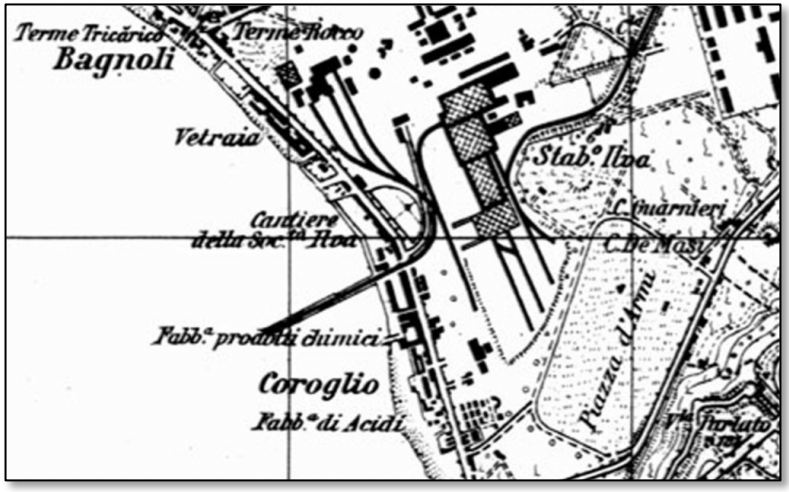
The factory, as we have said, was located at the beginning of the Campi Flegrei, on the Coroglio plain, in an area characterised by the emergence of sulphur springs and thermal waters that had been devoted to thermal baths since ancient times and which, however, had been only very marginally touched by the factory, as only a glassworks had existed for some time. The building of the first factory did not stop the operation of the *balnea* that had given their name to this area, which was called precisely 'Ai Bagnoli'. During the 19th century, the baths had modernised and were equipped with hotels, restaurants and gardens. Not far from the Lefèbvre facilities, there were already the facilities considered modern at the time, the Manganella (1831), Cotroneo (1831) and Rocco (1850) thermal baths. After the installation of the factory, the Tricarico also sprang up. (1882). In fact, until almost the end of the century, photographs of the area show us the coexistence of agricultural areas, industry and baths, even though, especially from the 1910s, industrial facilities expanded to the extent that many baths and the remaining vineyard plots disappeared. Not entirely, however, because still around 1960, residual bathing establishments survived, where possible.

The location was strategic because sulphur from Sicily could be received from the sea, a raw material for products such as carbon sulphide and many other products; the financial

backing was good because the Lefèbvre industrialists in those decades enjoyed exceptional success in their various industries. Unfortunately, this factory proved to be more exposed to adverse events, precisely because it dared so much. The context was very fragile considering the backwardness of the Italian system compared to that of other states; industrial chemical production was pioneering and Déperais and the Lefèbvre had to move in an extremely poor industrial and infrastructural condition.

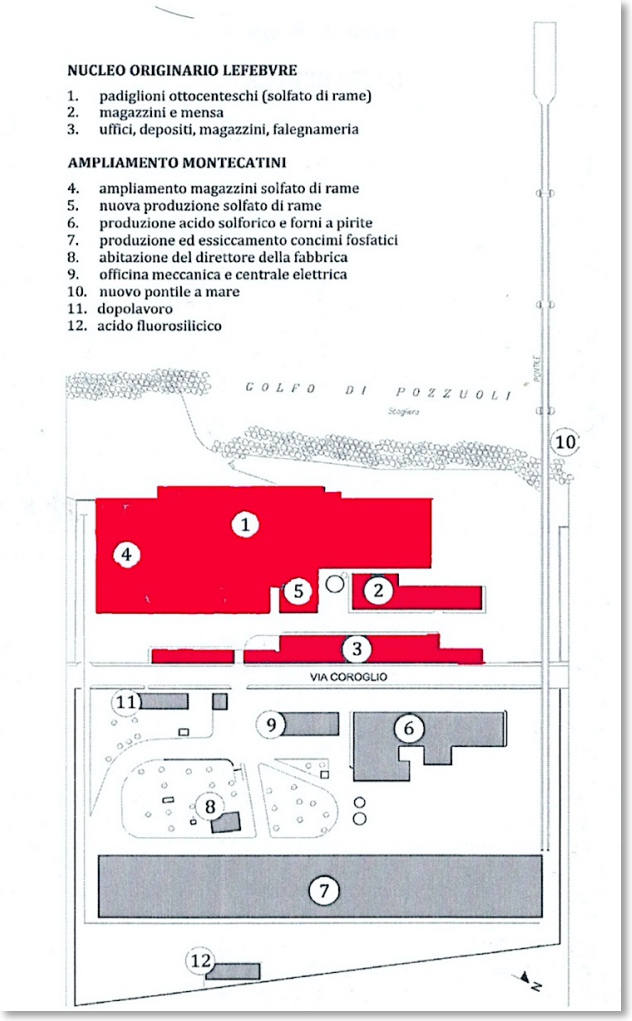
As if this were not enough, the first ten years and more of activity were hampered by a series of obstinate initiatives by Demanio, which tried to take possession of the area on which the factory had been built, even demanding, on several occasions, that it be demolished.

This apparently unmotivated quarrel was perhaps linked to a desire to prevent the development of a chemical industry in Naples at that stage, which went on until 1871.



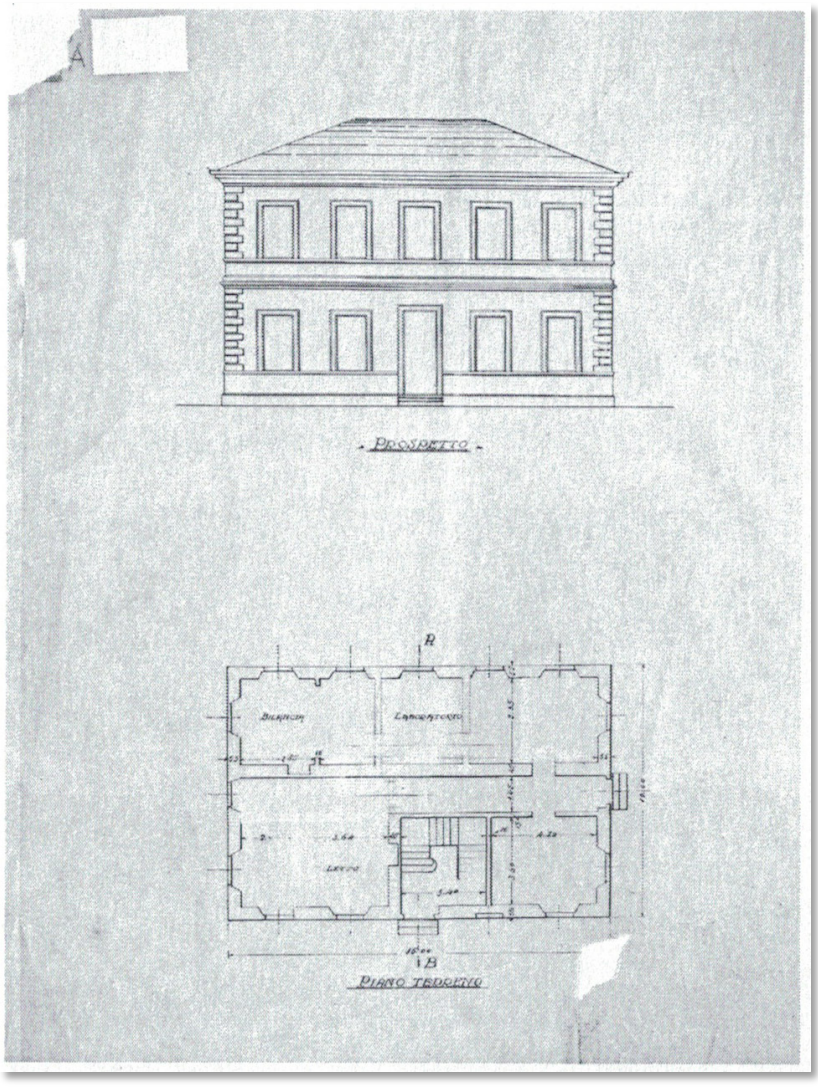
Istituto Geografico Militare, F. 184, map NE Pozzuoli, 1:25,000, year 1907. The Lefebvre factory is indicated here as the 'Acid factory', as in a similar document of 1888. Of later construction is the 'Chemicals factory'. The factory is divided into the two production units 'acids' and other 'chemical products' (cf. S. de Majo and A. Vitale, 2014, p. 40).

In the map reproduced above, one can still see some traces of the thermal vocation of the plain: Terme Rocco, Terme Tricarico and a few others; its transformation is also beginning with the construction of the ILVA plants.



Re-elaboration of a drawing reproduced in S. de Majo and A. Vitale, La città della Scienza, p. 40.

A 'glassworks' is marked on the map, which can only be the Bournique, which stood next to the Lefèbvre plant. In the book by De Majo and Vitale (2014), the original Lefèbvre plant is distinguished from later buildings.



Map of the factory manager's house
(1853 and subsequent renovations).

All that remains of the original layout today is the Director's House, where Déperais probably lived, at least for a few years, even though he lived in Naples. The house still shows the neoclassical layout designed around 1853, although the elevation and documents (the one reproduced above is from Montecatini documents) make it clear that it was remodelled, probably more in the interior rooms than on the exterior.

The factory manager's house, photo De Majo - Vitali 2014, p. 87, (photo from 2013).

Chapter 9

The lawsuit

It is not insignificant to know something of the legal case that had been debated almost since the foundation of the factory and lasted for about fifteen years, only ending in 1871. Only then was the Fabbrica Chimica Lefèbvre in the Bagnoli free to operate without the threat of the demolition of its structures or parts of them. Following this lawsuit shows how difficult the conditions under which the managers worked had become.

It all starts in 1457, when the land of Bagnoli with the area called Coroglio, closer to Posillipo, was donated by King Alfonso of Aragon (1481-1500) to the nobleman Nicola 'Cola' Sannazzaro. This was a liberal donation that must have been accompanied by some document that, although mentioned many times, seems to have been lost. Possession was maintained by Sannazzaro's successors and then sold by one of them, named Troiano Sannazzaro, to third parties, with deeds and payments dated 10 January 1651, 16 January 1654 and 22 March 1695.

The new owners of the plain and the beach in the 19th century were members of Carlo Venuto d'Accaja's family, descendants of Trojano Venuto. The latter, on 20 April 1827, declared that he had granted a small part of it in emphyteusis to the Administration of Indirect Duties and the Administration of Public Health and the remainder to Messrs Giambattista and Raffaele Mugnoz, Antonio Pineda and Luigi de Ruggiero, as well as to Mr. Tommaso de Franco and Giuseppe Jauch (20

December 1826). This 'society' obtained direct dominion from the beach to the embankment 'ai Bagnoli', at the price of 650 ducats. Examination of the cadastral maps of Bagnoli shows that all the parts granted in lease and emphyteusis made up the total of the land purchased by Lefèbvre.

It was from these that Charles Lefèbvre had purchased the land through Messrs Errico Catalano and Ottaviano Cusutto – agents in the deal – by deed of 22 April 1854 with the intention of building a factory on it. The Demanio immediately objected, demanding the handing over of the beach, as it did not accept the change of use. The apparent reason was that they wanted to preserve its old destination as a seaside and agricultural site, evidently having little faith in the development of a chemical industry there. Charles Lefèbvre appealed, an appeal declared null and void by the Court of Naples on 1 May 1858. The reason for the nullity of the appeal was that he could not produce the original of King Alfonso's concession to Sannazzaro but only documents from 1651 and a 'bancale' (cheque) from March 1695.

An appraisal was then ordered (in fact, at least two different appraisals were made) to ascertain whether the built works exceeded the land named in the 17th century documents and it was "requested that the demolition of the unlawfully elevated works be ordered without further order". But which parts were to be demolished was not clear. The experts argued that "Balsorano, by virtue of the 1497 concession, is the owner of the entire Bagnoli beach, which from Monte dei Sassi reaches all the way down to Monte Coroglio; that the factory landing stage that extends into the sea, the rocks and the artificial dunes may cause damage to the port of Nisida, but not to the beach; that with the new constructions no part of the actual seashore was kept by them determined, therefore the corner of the

glassworks, the ruins of the factory landing place and a portion of the artificial dune falling on the repeated area of the state property".[27]

In the meantime, Charles Lefèbvre died and the owner of the case became his son Ernesto. The fact that Déperais never appears as a party in this case suggests that he was never a partner, as is sometimes assumed. On 18 May 1860, the Demanio reported to the Intendancy Council that 'the late Count of Balsorano had built a large building on the beach of Bagnoli to be used as a chemical laboratory and had later enlarged it on the lido side with other works, including that of a factory landing. He therefore asked for measures to demolish said unauthorised works'.[28]

In fact, a lawsuit initiated by the Demanio to regain possession of part of the beach and state property had turned into an action to claim the entire beach. The Demanio in fact, asked for a survey to measure the beach and the size of the establishment, which, according to its technicians, was partly built on its own land and partly on State land. Above all, the 'plateau' built on the beach to facilitate access to the sea was on State land, and the rocks placed as breakwaters at the end of the beach were also on State land. Although the beach and the land had been sold to Charles Lefèbvre as freehold property (deed of 21 April 1854), the Demanio and Taxation Directorate, in an application of 20 April 1865, addressed to the Prefectural Council, requested the release of hectares 12, 46, 15, as those which, having already been granted for grazing use only, had by right reverted to the State Property. He also demanded the demolition of the works deemed abusive on the

[27] Court of Naples, 25 February 1871 (see appendix).
[28] *Ibid*.

land destined for pasture use and asked for damages and expenses. The same request was repeated in the acts of 2 and 22 November and 7 December 1867, before the Civil Court of Naples.

With their respective final pleadings, Count Ernesto Lefèbvre of Balsorano defended their arguments regarding the application for release; regarding the value of King Alfonso's concession, he asked for the application to be rejected. The Demanio objected, declaring that not only the beach and the sandy ground belonged to the Demanio, but the entire land once used for hay production and grazing. On 25 October 1870, the Treasury, in reproducing the case, deduced that the action of the Demanio intended to claim 'the entire beach among the properties donated by King Alfonso of Aragon to Cola Sannazzaro in 1457 and that the demolition of the works illegally built on State land should be ordered'.[29] He reiterated, in short, that 'the entire beach should be released and the building demolished'. In its judgement of 15 February 1871, the Court held that "the action of the state property was aimed at claiming the beach from the Bagnoli; that of the titles exhibited by the Count of Balsorano, only two could be valid as equivalents of the primitive title of King Alfonso's concession: i.e. the istrumento of 16 January 1651 and the bancale of 1695; that from the former it results how the donation, for the sea consisted in the right to fish, and for the marinas and the territories near the beach, in the right to herbage and pastures; that from the bancale it results the sense that the beach at the Bagnoli was precariously granted to Sannazzaro, and so also to the descendants of Trojano Venuto", i.e. Carlo Venuto.

[29] *Ibid.*

Consequently, he declared "the entire beach from the Duna to the Bagnoli, previously owned by Balsorano, to be the property of the aforesaid Intendancy of Finance ", condemning the same "to demolish the part of the factory landing place that protrudes from making the rocks and the artificial Duna within the term of 4 months". Not only that, it reserved the right to demolish other works as a result of the trial.

One can imagine what the mood was in the factory run by Déperais in those days: was the possibility of a cull concrete? Was the possibility of the factory being closed concrete? Lefèbvre's lawyers feared it and got busy. They finally obtained, after a timely appeal, the reversal of the ruling. In fact, the case only came to an end on 25 February 1871 with the revocation of the decision of just 10 days earlier:

The Court, definitively ruling on the appeal brought by the Count of Balsorano Ernesto Lefèbvre fu Carlo against the sentence of the Civil Court of Naples of 15 February 1871, revokes it. And doing what was to be done by the first judges, without lingering over other exceptions preliminarily deduced by Mr. Lefèbvre, it declares that the action brought by the State Property Office represented now by the Intendancy of Finance of Naples for the revindication of the Bagnoli beach granted by King Alfonso of Aragon to Nicola Sannazzaro, presently owned by Mr. Lefèbvre, is time-barred. Therefore rejects any other request for demolition of works built by the same lord Lefebvre on the beach owned by him. Without prejudice in whose favour, if, as by law, every right, reason and action, regarding works built outside the limits of the area possessed

by virtue of the same sovereign concession, or that wherever built were prejudicial.[30]

The lawsuit brought by the Demanio against the Lefèbvre Chemical Industries in Bagnoli is, however, very curious. In the first phase, which lasted from 1854 to 1858, the disputes were limited to certain works carried out on the beach: a concrete platform, a pier and artificial reefs to facilitate access to the sea and the transport of products. Subsequently, starting with the 1860 survey, the case became more important: it was no longer only works defined as illegal and built on the beach that were contested, but the possession of the entire land on which the factory stood. For more than 10 years, lawyers and experts debated the nature of the possession derived from the donation made by King Alfonso in 1457 of the entire land, which then passed to Trojano Venuto and then to his descendants and was then sold during the 19th century to other parties who resold it to Charles Lefèbvre in April 1854.

Certainly, no buildings had been erected on the land that had been used for agricultural and pastoral purposes before, except for the glassworks, about which no exceptions were apparently raised – unless the entire industrial plant was considered unique – and a few buildings for agricultural use. The Demanio's concern, especially in the post-unification period, therefore appears singular and excessive: it was demanding the demolition of a modern chemical factory, which at that historical moment was unique in southern Italy. Was there any pressure other than the express pressure to enforce the law

[30] Court of Appeal of Naples, IV Section. Spiagge-Lidi-Prescrizione-Interversione di diritti, *Sentenza del Tribunale di Napoli*, 25 February 1872 in *Gazzetta del Procuratore*, Naples 1872, pp. 114-116.

after centuries in which no one had dealt with who was the actual owner following the mid-15th century donation? It is safe to assume so, although we have no evidence at present and so the hypothesis must remain a mere supposition. At that time, there were no ecological concerns and indeed a modern factory was considered of great value. Probably, knowing of the risk it ran, Zanni and Betocchi visited it precisely at the time when its demolition was threatened and their writings could go to constitute a defence of the goodness of Lefèbvre's initiative that could not be ignored by the judges. If they had agreed to the demolition, they would have been responsible for a considerable impoverishment of the Neapolitan economy, at least from a symbolic point of view, which was already heading for a deep crisis.

When, on 25 February 1871, full possession of the land was granted to Lefèbvre, one can imagine with what relief the outcome of a lawsuit that had lasted at least 15 years, with constant threats from the Law to first demolish a part, then all the factory buildings, was welcomed. How much did this threat affect the dynamic management of the factory, the decision not to expand the range of its products? The director, as we shall see, was a first-rate character who had to deal with an asphyxiated market, the crisis in the paper industry and the lack of infrastructure in the Bagnoli area. On top of that he had to endure the pressure of the destruction of the factory by the stubborn action of the Demanio.

Chapter 10

The Alinari photo

The Alinari photograph reproduced above is very important. Its dating is uncertain, there are authors who date it between 1900 and 1905 or 1890, i.e. just after Lefèbvre's sale to Walter, as seems more likely observing that the layout still looks very similar to the original. If it dated, as now seems more certain, to a period close to 1890 or even slightly earlier, it would appear almost in its original form, except, perhaps, for some initial extensions already made by Arthur Walter.

Definitely belonging to the factory were all the darker buildings near the chimney, which show a considerable length. The darker, shed-like buildings are those built by Lefèbvre. If

we consider the legends on the 1907 military map, it would appear that the Bournique-Damiani glassworks is located a few hundred metres further on and not adjacent to the Lefèbvre factory.

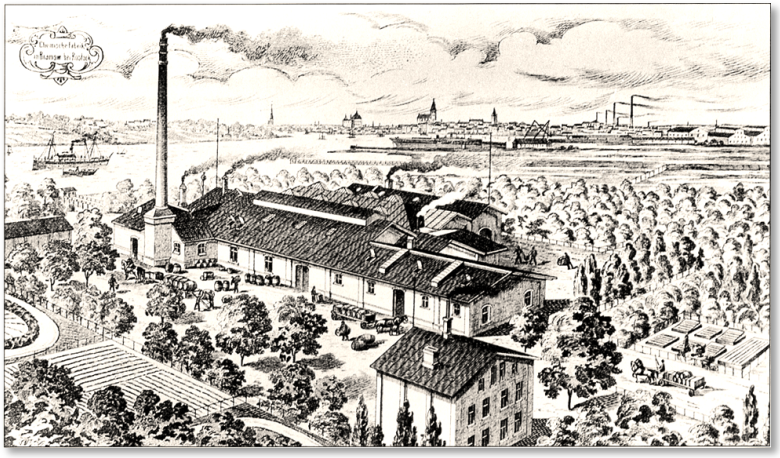
A very large building

It was therefore a very large building, and much of the original structure of the Lefèbvre factory was still present, albeit in some parts manipulated and integrated, even when Ilva was decommissioned.

A photograph, taken in 2013, shows an interior of one of the sections of the original structure, the tallest and widest, thus dating back to the Lefèbvre period. At that time it was in a state of semi-decay and used as a storage facility. However, one can appreciate the remarkable size of the facility, which represents a typical early industrial building: a very tall space with large windows that were meant to capture as much light as possible at a time when lighting was still expensive and scarce.

The Palladian ceiling trusses rested at 5.5 metres and the height at the apex was approximately 6.5 metres. The height was also meant to disperse toxic fumes and vapours from the room in which the decantation tanks were located. It was one of the three large production sections of the factory that maintained the original, 19th-century plant in the area downstream from the road. Unfortunately, all chemical equipment (reactors, settling tanks and other apparatus) had been dismantled by that time, making it impossible to preserve the industrial archaeological heritage in its integrity. This part of the facility, especially the Lefèbvre and Walter section, became an integral part of the City of Science after 1993.

In this space, 'the workings of the primitive Lefèbvre plant until the closure of production were carried out by the workers who collected the copper crystals at the bottom of the vats by hand. Both in the original plant and in the more recent production organisation, the sheds facing the sea were used for this processing'.[31]

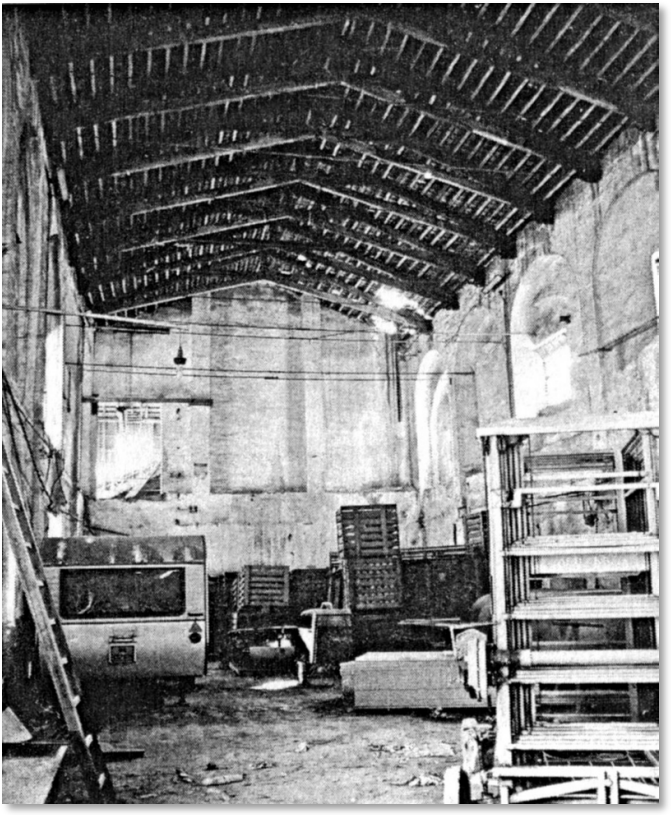


The Friedrich Witte Chemistry in Rostock, circa 1890. It belongs to the same construction type as the Chimica Lefèbvre at the Baths.

The picture above depicts a chemical factory in Rostock, the Friedrich Witte, in a drawing from around 1890. Although it produced different substances than the Lefèbvre in Bagnoli, the Witte has the same type of construction that was widespread in the mid-19th century in Germany and France: a furnace with a chimney at the end, and a long shed divided into compartments for the various processes, with drying tanks and

[31] Silvio de Majo - Augusto Vitale, *Alle radici della Città della Scienza,* cit., p. 73.

the various apparatuses, as well as one or more steam engines. To the sides is the loading and unloading area and, beyond the main shed, the warehouses that in the Lefèbvre factory were located in the narrow building facing the street. In the foreground is the caretaker's and factory manager's house, in this case with offices. The sea or river was at that time necessary for the transport of raw materials and the shipment of the finished product.



Interior of the room of the original Lefèbvre plant where copper sulphate production took place (photo from 1993, from S. de Majo and A. Vitale, 2014, p. 81).

Chapter 11

The activity of the factory

When he took over the reins of the Lefèbvre empire, Ernesto was 40 years old and was familiar with the development of various modern industries in addition to the paper industry, especially the newer ones. He regularly read magazines on scientific and technical progress, both Italian and foreign. He was aware that he was operating in a market that was more constrained than the one in which his father had started, a market where credit for new activities was scarcer than at the beginning of the century. His goal, like his father's, was to cut the cost of importing essential chemicals, especially acids, which accounted for a significant part of the total cost of papermaking.

By 1860 the factory was ready. We do not know the exact stages of construction but, considering the time frame, work had to begin in 1855 and be completed around 1858. The construction documents are, at the moment, untraceable. The construction of the main body, "a large building used as a chemical laboratory", with various service buildings, the factory manager's house (which still exists today, after various modifications over the years), and a sea passage with a wharf for embarkation, was completed around 1858. The complex was very close to the sandy shore – but not to the sea – and, after a courtyard, had a body of offices and warehouses overlooking the road to Pozzuoli, a road that connected the

village of Coroglio with that of Bagnoli, a town much frequented by tourists.

At the time, the beach was about 200 metres wide, later it receded and in any case the establishment was protected by an artificial reef and a row of dunes. A few years after the purchase of the Bagnoli shoreline, Ernesto had also acquired an important share (around 30%) in the glass factory that stood a little further north, the glassworks of the Swiss Melchiorre Bournique (1829-1909).[32] The financial efforts were considerable and unfortunately, as we shall see, production did not begin until 1864, a good 10 years after the land was purchased, while the lawsuit threatening the downsizing of the factory itself, if not its destruction, continued. In 1864, the assembly of reactors and plants was completed, especially the large settling tanks for iron sulphate, the steam engine and the furnaces.

The direction of the plant was entrusted, as we know, to the Frenchman Charles-Alexander Déperais (circa 1810-1900) – originally from Bercy but Parisian by adoption –, an expert in textile and paper dyes. Déperais travelled frequently in France and kept in touch with the French chemical world. Ernesto's first aim was to produce on his own the products he had to import from abroad in large quantities and at high prices; a way of reacting to changing general conditions by at least lowering the cost of a component of the production chain. The plant was also designed to offer its products to the paper mills of the Liri Valley and the textile industries of the Salerno area,

[32] A Bournique glasswork dedicated to the manufacture of lamps, derived from this Neapolitan one, set up in Indiana (USA) and became famous for its original glass lamps that were very successful in the Art Deco period.

especially the Filatura di Sarno in which the Lefèbvre family owned shares.

A *Relazione della Camera di Commercio e Arti di Napoli* in 1864 states that the factory produced only sulphuric acid and alum and that it did not work at full capacity, probably because of the dispute with the Demanio: 'the company that founded this factory set out to produce several articles; but in fact it did not carry out the important design it had proposed and restricted it almost exclusively to the manufacture of two products: alum and sulphuric acid'.[33]

So, demand was less than expected, but the reasons for this factory's lack of success must be reasoned with. It certainly did not work at the expected full capacity due to the structural, economic and social crisis that affected all the territories of the former Kingdom of the Two Sicilies in the aftermath of Unification. Even more important, perhaps, was the legal case mentioned that made its existence uncertain for almost fifteen years.

[33] *Relazione della Camera di Commercio e Arti di Napoli*, Napoli 1864, cit. in Silvio de Majo - Giovanni Ventura, *Alle radici della città della Scienza*, op. cit., p. 31.

Later, especially after the legal victory of 1871, production resumed and was extended to other acids, sulphites and other products such as carbon disulphide. Sulphuric acid, in particular, the most popular product of the factory was an intermediate product of inorganic chemistry and was used for the production of chlorine to be used for bleaching paper or cotton fabrics. It was distributed in demijohn drums.

The factory also distinguished itself through the production of good quantities of alum, used to make paper glue, with the addition of resin. It was used as a brightener in the tanning industry and also in the construction industry and rubber vulcanisation. This name denoted either naturally occurring aluminium potassium sulphate or alumina sulphate, obtained by the action of sulphuric acid on aluminium silicate minerals. At Lefèbvre it was produced in 'about 1,000 metric quintals per month'. It was obtained from both aluminous schist and tuff.

According to Zinno, it was no longer used in the paper industry (where new, more effective compounds were being found), but rather 'as a mordant for linen and cotton fabrics, as a tanning agent for hides, not only to clarify cloudy waters and other liquids, as an internal and external medicament, as one of the factors in artificial marble' (S. Zinno's *Relazione*, 1871).

Concerning the production of alum, a report from 10 years later gives us the unpublished information that the factory obtained its raw material from the mines of the Leucogei mountains, not far from Naples, and that the production of alum was abundant and renowned, so much so that it was the first (in the sense of most important) factory that handled large quantities of this product, guaranteeing a very good cost price:

"In modern times, the first factory for this product, planted on a large scale and in accordance with the progress of the chemical

industry, was established around 1854 in the vicinity of Naples Bagnoli under the direction of the chemical engineer Carlo Déperais, for the account and exclusive interest of Carlo Lefèbvre, Count of Balzorano; this site in the Phlegrean region was chosen because it is very close to the Leucogean mountains, which provide an abundance of a type of natural alumite in the form of a grey-coloured pasty clay, commonly known as lead.

This lead, calcined and then attacked with sulphuric acid, industrially yields 70 kg of crystallised alum for every 100 kg of treated matter. If ammonia sulphate or potash is added, about 220 kg of alum can be obtained from each 100 kg of lead. And at the head, calcination is carried out in a reverberatory kiln, then 130 kg sulphuric acid is attacked at 50, brought down to 30 with water; a dose of potassium sulphate corresponding to the excess of ammonia sulphate is added, hot clarified and poured into the crystallisers'.

Another process that was possible at the plant is described, reusing the sulphuric acid that develops from the lead in the calcination and thus

"in addition to the economy that is achieved due to the lower commercial cost of potassium chloride, there is also the advantage of more regular cooking.

The quantity of lead processed in the year 1881 amounted to about 1,000 tonnes, and production to about 1,200 tonnes of crystallised potash alum; the selling price, placed at the factory, was 150 lire per tonne. Processing lasted the whole year (300 days) and employed 32 workers daily'.[34]

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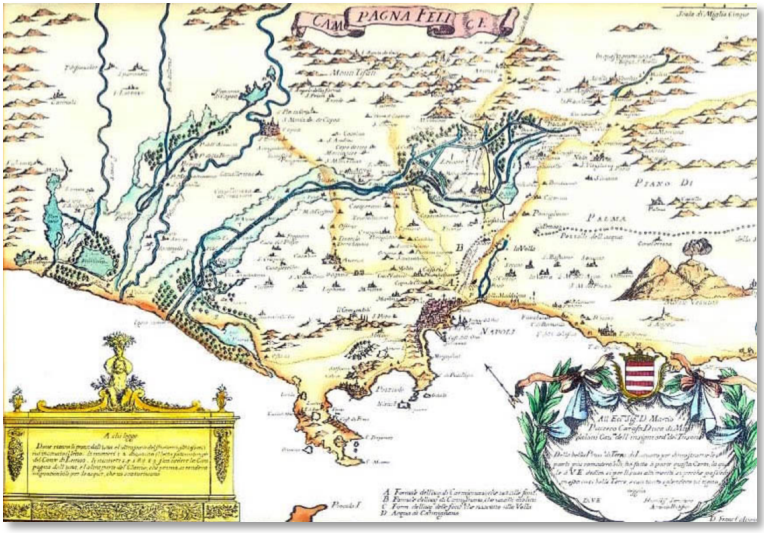
[34] *Annali di Agricoltura 1883, Relazione sul servizio minerario 1881*, Ministry of Agriculture, Industry and Commerce, Botta, Rome 1883, pp. 326-327.

We thus learn that already in 1881 the number of workers had risen from 24 to 32, to which we had to add a dozen or so caretakers, transporters, accountants and salesmen.



According to the *Annali di Agricoltura 1883,* in 1881 the Chimica Lefèbvre was extracting shale for the production of alum from the heights of the southern Terra del Lavoro, called Monti Leucogei in ancient maps. Thus two of the main raw materials could come from the south: sulphur from Sicily and lead from the Terra del Lavoro where, moreover, the factory owners had three paper production plants.

Chapter 12

Patents and experiments at Chimica Lefèbvre

As Charles Déperais was writing technical articles in the *Bollettino del Reale Istituto d'Incoraggiamento,* we can gather his complaints about the problems Lefèbvre's industry was facing in finding skilled labour, which was almost non-existent in the Naples area. The industry was operating in a pioneering field and so the technicians all had to be recruited in France at a considerable cost. These were people who had to expatriate, who had to be provided with housing and who were probably bound by multi-year contracts. Another problem was the asphyxiated market that had not developed as much as was thought after the Unification. Then there was the lack of infrastructure in the area where the company was located. It is understood that the infrastructure had been promised by the Bourbon but after the change of regime the new rulers did not carry it out and for more than decades the area remained poorly served. A change occurred only during the years of Fascism and during the management of Montedison, when many works were carried out to connect the area, and then after the war, starting in 1946.

The Lefèbvre factory, which initially employed 24 people, increased by about 15 towards 1870 to about 40 in addition to the employees and manager. It was anything but a small plant if we consider its size (as we have said, the length of the main building was about 180 metres) and the fact that Italian

chemical factories were, at that time, mostly small workshops producing modest quantities of product and with few workers.

Charles Déperais, a chemist, engineer and inventor, held several important patents. He was capable of designing innovative machines to improve the quality and speed of the manufacturing processes he dealt with.[35] From the very beginning, the factory had a 5 hp steam engine and produced a good quantity of sulphuric acid, about 12,000 quintals per year at 50 degrees, but also between 700 and 900 quintals at high degrees (60, 66 degrees). This product was sold in the Mezzogiorno but also in Rome. In addition to alum, it also produced copper sulphate and ammonium.

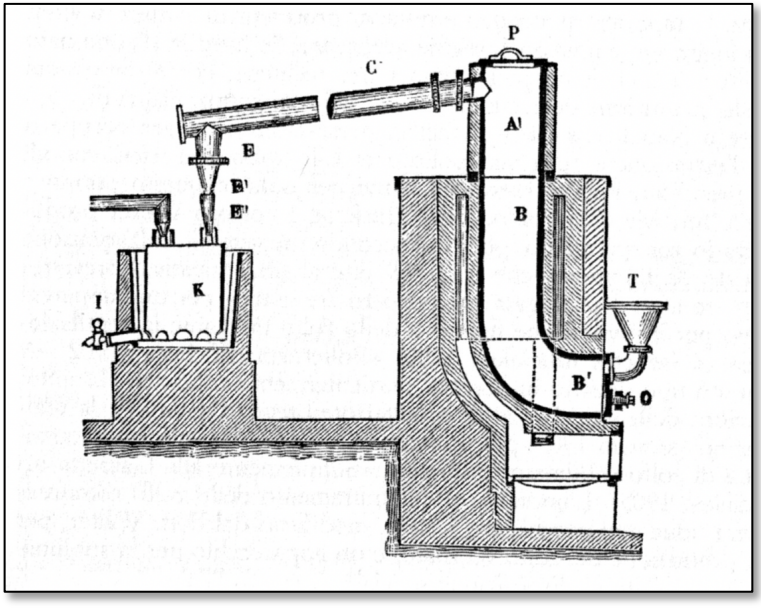
A full description of Lefèbvre Chemical Industries, by Professor Silvestro Zinno, was published in 1871 in the *Atti dell'Istituto di Incoraggiamento* in which Déperais was interviewed. Zinno praised the Lefèbvre factory as one of the few Italian chemical factories able to hold its own against international competition from factories in France, Germany and England, but lamented the problem of the lack of rail links which made the transport of materials and products very expensive. He praised the fact that it was an almost unique example of autonomy at a time when Italy was importing 'from overseas' almost all chemical products 'indispensable and useful for the natural and civil needs of our people'.[36]

The rarity of industries like Lefèbvre was due, according to Déperais but also for Zinno and Betocchi, to the lack of good technical education. As a result, small and poorly capitalised industries were exposed to destructive competition from foreign products that were imported from abroad at a lower

[35] *Bulletin des lois de la Republique Francaise*, Paris 1843, p. 266.
[36] Silvestro Zinno, *Sulle possibili industrie chimiche nazionali*.

cost because they were produced in large factories: 'prepared on a large scale by economical methods, and more or less arranged in grandiose factories' (Report, S. Zinno, 1871).

The Bagnoli factory was also the only one in Italy to produce carbon sulphide using a device invented by Déperais. It produced as much as 300 kg a day economically and could be used for many industrial processes and 'for vulcanising *caoutchouc*, for extracting fatty substances, paraffin, iodine, bromine and sulphur from poor minerals, for degreasing wool, etc. etc., and most effectively for extracting olive oil from its stones' (Zinno, 1871).



Apparatus invented by Déperais for the production of carbon sulphide (from S. Zinno, 1871, p. 60).

Déperais had spent all his fame and recognised *expertise* in the field in setting up this factory. The production of sulphuric acid, for example, was described as abundant and the production process as modern. We have seen Alessandro Betocchi specify that the factory is an 'immense building', subdivided into 'several compartments, each of which is consecrated to various processes' with three furnaces, one to calcine and one to burn sulphur, a steam machine, and is full of pumps, apparatuses, lead chambers, vats and caissons for crystallisation' (Betocchi, 1871).

The factory's pluses, in a sense, were therefore the continuous processing system and the equipment invented by Depérais, as well as the abundance of raw material at low cost. During the 1870s, however, after the legal problems had been resolved, the factory had to face the crisis of southern industrialism and – not a secondary aspect – the cost of rail transport fares, which made its products unprofitable in the central north. It also lacked, altogether, state protection such as that received by the Turin-based Borgo Dora and other companies. These problems were overcome by Arthur Walter precisely because of the type of product he dealt with: fertilisers. These had an outlet in neighbouring, agricultural areas, and the less burdensome the tariffs in this trade. Certain circumstances, such as the fight against peronospera, which was successfully tackled by Walter & C., also strengthened its market presence.

Walter's prosperous period was followed by the less prosperous period of Unione Concimi, the factory that kept those plants between 1905 and 1920 and then sold everything to the neighbouring Ilva; Unione Concimi had to endure various contractions in demand and, among other things, the First World War.

Using the factory's products, Déperais also became famous in the 19th century as a mummifier and inventor of preparations for preserving bodies, disinfecting them and curing cholera. One of his preparations received a patent on 20 March 1880 for three years. It consisted of a:

> A new preparation to harden animal substances and tissues and make them insoluble in water, thus protecting them from putrefaction, so that they can be more easily used for the manufacture of artificial fertilisers and the embalming of corpses.

This preparation was then transferred and sold to Mr Alfredo Huet on 20 May 1881.[37] The process 'to make the hydrocarbons constituting the gross tar-oil undergo all the metamorphoses of which they are susceptible under the double influence of air and lime hydrate, the purpose being to attenuate their harmful action on vegetation and to increase their toxic action on insects' was also sold in May 1881.

[37] *Gazzetta Ufficiale del Regno di Italia*, p. 2596. Supplement to No. 144 (22 June 1881).

Chapter 13

The role of the Istituto d'Incoraggiamento

In 1868, Carlo Déperais became a corresponding member for the Fourth Class (Technology) of the Reale Istituto d'Incoraggiamento for Natural, Economic and Technological Sciences in Naples.[38] Two years later, on 18 August 1870, he became an ordinary member for Class One (Chemistry, Physics and Mathematics). In this capacity, he was able to guarantee the factory he headed the highest quality in terms of keeping up to date, the circulation of ideas and collaboration with other chemists. The large number of patents and innovations he perfected certainly also stemmed from the fact that he had a factory with an established and well-equipped chemical laboratory. Even some of his initiatives, which we will discuss later, such as the production of Déperais powder to hinder the spread of the cholera epidemic, can be explained by the possibility of relying on such a well-equipped facility, for the time, as the Lefèbvre factory.

The Istituto d'Incoraggiamento, which not surprisingly sent one of its important correspondents, the aforementioned

[38] Only two years earlier, he had strongly criticised the work of this institution, which in 1851 had obstructed his project for a patent for the production of artificial fertilisers made from the disinfection of organic waste: 'This fact proves again and again how the academies often become the stumbling blocks of civilisation; for if the Reale Istituto d'Incoraggiamento had not obstructed our proposal, we would already be 15 years ahead in the fulfilment of a concept whose imperious necessity is now felt'.

Silvano Zanni, an award-winning member, had been founded in 1806 by Joseph Bonaparte on the model of similar French institutions. It had also picked up the cultural heritage of the dissolved Reale Accademia delle scienze e belle-lettere di Napoli (Royal Academy of Science and Fine Arts in Naples), active from 1780 to 1788. Its mission was to promote studies in the natural, economic and technological sciences also to facilitate technological spin-offs useful to society. It was based, at that time, in a building obtained from the renovation of the unused covered market of Tarsia. In 1853, it had hosted an industrial exhibition displaying the products and trades of Neapolitan industry and craftsmanship that was visited by many thousands of people. The hall was very beautiful and modelled on the type of ancient basilicas with three naves, lit by fourteen large windows.

Interior of the Tarsia Hall with the Exhibition of the Products of Arts and Crafts on 30 May 1853 (Salvatore Fergola, 1854). The hall of the Istituto d'Incoraggiamento was the theatre where Déperais presented his discoveries and experiences in the Chimica Lefèbvre.

In the following years, the Tarsia Hall was assigned entirely to the Istituto and also housed a Technical School (1863).

The façade of the Reale Istituto d'Incoraggiamento in Naples at the end of the 19th century, a forum for discussion and debate for Déperais.

According to the 1887 statute, the Istituto's main objective was 'to promote the increase of social welfare, especially in the southern provinces, through the study and dissemination of the most useful applications of the natural, technological and economic sciences to agricultural and industrial production and trade'.

Inventions, new chemical preparations, production processes in the most diverse fields were examined. Matters pertaining to industry, agriculture and trade were also examined. Periodic exhibitions were organised and at the end of each year, he published the rich *Atti*, which collected the memoirs of the

members and various studies and documents that were often of considerable interest. In his capacity as a member of the Istituto and director of a unique chemical factory in the area, Déperais wrote a series of 'memoirs' that were read at academic sessions and later published in the *Atti*.

They are writings full of insights, inventions, proposals, research in the most diverse fields of his chosen field. In some cases, his writings have a historical trend, such as the *Storia della fabbricazione dell'allume*, a product dealt with in the Bagnoli factory.[39]

[39] *Rendiconto del Reale Istituto d'Incoraggiamento delle Arti e dei Mestieri di Napoli*, I, fasc. 11-12, pp. 194-195.

Chapter 14

The chemical fight against cholera (1865-1885)

Déperais, in his capacity as a chemist, worked to reduce the impact of the cholera that periodically plagued European cities, most recently Naples. In Naples, the contagion was particularly severe due to poor sanitary conditions, especially inadequate sewage systems. The turning point came after 1880, when Louis Pasteur realised that the pathogen was the vibrio of cholera, a micro-organism that passed through groundwater pollution. Before then, chemists had been dealing with the disease by proposing solutions that were not always effective, empirical, sometimes yielding some results, sometimes not. Déperais, before the discovery of micro-organisms, was one of these scientists who, in the absence of valid paradigms for explaining certain phenomena, used to be industrious.

The Frenchman studied the disease in two texts, 18 years apart, on the occasion of two epidemics, that of 1865-1866 and that of 1884. In *Note e chiarimenti sui mezzi adoperati a disinfettare le materie organiche*, he recalls how, as early as 1851, he had submitted an application for a patent for the application of a method of 'hygienic draining' and for the production of artificial fertilisers through the re-use of sanitised and treated sewer contents for safe transportation. His proposal contained a method to have the organic substances sanitised by the citizens themselves, collected and distributed to agriculture as fertilisers and rich in nitrogen. As

privatisations, at that time, were granted after a positive opinion from the Reale Istituto d'Incoraggiamento, the proposal was presented but rejected by the Institute itself, arousing Déperais' spite and criticism (1868).

In the first days of August 1865, when the city was threatened by cholera contagion, Marino Turchi, president of the Central Hygiene Commission, of which Déperais himself was a member, proposed to the Royal Delegate Pisacane the purchase of some disinfecting substances. Invited to quickly manufacture iron sulphate, in the Lefèbvre factory in Bagnoli, Déperais began to deal with the disinfection of toilets and cloacae using a very cheap powder that mainly neutralised the exhalations (but he was unaware that the pathogen was not neutralised). As the amount of iron sulphate produced by the Bagnoli factory was insufficient, Déperais studied and implemented (even spending out of his own pocket) a process to collect the filing and turning residues of iron collected from the mechanical workshops in the Neapolitan area and transform them into anhydrous iron sulphate. He also drew up practical rules of hygiene and disinfection that could, in his opinion, prevent the spread of the disease. These included disinfecting the droppings and vomit of cholera sufferers, preventing them from being thrown into the sewers or buried, with the risk of polluting and spreading the disease through the infiltration of wastewater from sewers and cesspools into drinking water wells, given the porosity of the tuffaceous soil and the old age of the installations.

In his proposal, Déperais recommended reorganising the sewers and cleaning the main conduits after disinfecting them; emptying and disinfecting cesspools, cleaning public latrines and removing rubbish; washing the streets with plain or disinfectant water. He also recommended establishing steam

trumpets (i.e. pumps) to raise the sea water to a certain height and wash the lowest and dirtiest parts of the city and bury the disinfected corpses; disinfect the linen on the shoreline. These ideas were accepted and, in August 1865, the disinfection of Naples' sewers with iron sulphate and Déperais powder, composed of 4 parts charcoal and 1 part iron sulphate, was started. Then the rains caused a setback:

In fact, when it rains, the iron sulphate in the sewers leaks almost uselessly, gives the sea water a yellowish-reddish tinge, and harms the fish, as was observed last year. This excessive solubility of ferrous salt, and the ease with which it passes into the state of insoluble and precipitable sub-salt in the presence of water, should therefore be moderated. And for these as well as other reasons, I turned to anhydrous iron sulphate.

Although some efficacy of the substance had been observed, some expressed doubts. A chemical analysis of the powder was therefore requested. Thus commented Déperais:

I received no remuneration for this work, nor did I make industrial speculation out of the powder; it was enough for me to have fulfilled the desire for good and the wishes of the mayor, pressed by the Prefect of the Province itself. And if a telegram from Marseilles addressed to the aforementioned Prefect commented on the hygienic qualities of the mixture of coal and iron sulphate, it was consoling to see that it had already been in use for a year by me, who at my own expense manufactured and distributed it free of charge in order to provide a service to the country. [...] It is only astonishing to see some people criticise with bitter remarks the means that can help alleviate a public calamity; and instead of cooperating in advising the disinfection of the city on a large scale, they get lost in futile discussions.

Throughout this affair, the owner of the factory in which most of the powder was produced, Ernesto Lefèbvre, remained aloof and silent, leaving any action to the judgement of Déperais.

Raffaele Valieri, president of the Hygienic Commission of the Pendino Section between 1865 and 1866, went so far as to recognise the inventor's merits:

> And here I must say how the Commission has benefited in large proportions from the Déperais powder, which in addition to the advantage of presenting the anhydrous salt, of being easily and promptly used, and of its mixture which preserves to the coal its absorbent properties by means of the anhydrous iron sulphate, it also offers that of being very thin and spreading itself in a dust throughout the whole area of the loo, adhering to the walls in a uniform and sticky layer, without reaching the bottom as quickly as the solution of iron salt, and thus maintaining the odourless state of the loo longer; and out of a debt of gratitude I should mention that several loads were sent to our Section and Commission and all distributed and used. In addition to the methods of disinfection described above, the direct action of hydrochloric acid on the chlorate of potash was used, in accordance with the Déperais dosage, a very powerful disinfectant and alternating agent because it not only gives rise to chlorine but also seems to give rise to nascent or electrified oxygen (as I thought I smelled from the stench, which was not exactly chlorine), which electrified oxygen is so lacking in cholera epidemics, according to ozonometric observations. This medium, which Déperais freely and abundantly supplied, was still used in houses and rooms abandoned after cholera epidemics, as well as in alleys, cellars, support buildings, hallways, stairways and other places where the disease was beginning to spread.

Since Déperais used the Lefèbvre factory for the production of his powder, it is easy to think that Ernesto was not only

aware of, but in agreement with and participated in the enterprise, and made the factory available to contain the cholera epidemic. In fact, as would later be discovered, the disinfectant action of iron sulphate was very low even though it helped to eliminate miasmas and exhalations.

In any case, the idea of treating the contents of sewers to obtain useful fertilisers (a practice now widespread in various metropolises around the world) was taken up by Déperais in Paris after 1880, where he collaborated with Professor Huet. The two patented an antiseptic mineral liquor based on aluminium chloride, probably more effective than the iron-based liquor previously used in Naples.

The epidemic of 1884-1885

The cholera emergency resurfaced, with particular gravity, almost twenty years later. In 1884, a new cholera epidemic had spread through many Mediterranean cities, but in Naples it appeared more serious and persistent, difficult to eradicate, due to unresolved infrastructural problems and hygienic problems. Déperais admitted in another paper that his powder had little, if any, efficacy.

> Although this salt is to be prized for its very low price and because it is found in abundance in all markets, it does not fulfil the conditions set out above [i.e. it destroys infectious germs as well as neutralising bad odours] and has fallen from popularity, especially because it deodorises incompletely and because it has a weak germicidal action.

In this second study on disinfectant products, Déperais carried out a comparative analysis of them, including those in use abroad, and then focused on ferruginous aluminium chloride, identified by health commissions as the most suitable for Naples, as it was easy to prepare, cheap, non-corrosive and non-poisonous. Déperais produced quantities of it on behalf of the City Hall, at the Chimica Lefèbvre, during the epidemic of 1884-1885. Unlike ferrous sulphate, aluminium chloride stopped the fermentation and putrefaction processes of faecal and cloacal matter, neutralising microbes. This awareness had been reached after Pasteur's discovery of the bacterial origin of evil (1880). The preparation was similar to the 'antiseptic mineral liquor' produced in Paris by Huet and Déperais. It was the product of the chemical reaction between local yellow tuff powder and hydrochloric acid and could also be used against vine mildew due to a fungus, peronospera. It could also be used in the cultivation of wheat, barley, maize, hemp, oats, beans, peas and tomatoes.

Those who put forward chlorallum and other aluminium chlorides, manufactured abroad, and make comparisons between them and other disinfectants do not bear in mind that they have a completely different composition from ferruginous aluminium chloride, manufactured in Naples with indigenous elements. Charity of their country should lead them not to discredit a Neapolitan product, which also makes its modest contribution to the work of local workers and trade.

Much of Carlo Déperais's work seems to be aimed at the positivistic goal of halting the decomposition of organic matter and reusing it: from the system for reusing slaughterhouse waste (1851), to the *Liquore minerale antisettico* (1880), to the

disinfectant products experimented with during the two cholera epidemics. More curious are an apparatus for disinfecting and mummifying corpses (1883), and the idea of reusing animal blood as a high-protein foodstuff for the poor and needy (1885), also using their skin as a glue-stick (1894).

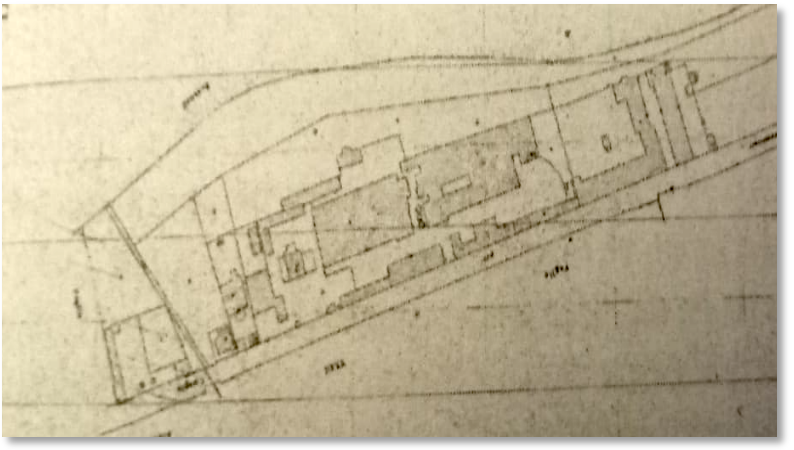
Chapter 15

Arthur Walter

The Lefèbvre complex was entrusted on 18 January 1887 to the administration of Pietro della Posta, Duke of Civitella, a procurator with full powers (Naples State Archives, company contracts, vo. 22). It was an act that prepared for the complete sale of the facility: but to whom? We know that the purchaser of the complex would have been Arthur Walter but the exact year is not certain.

In many books, such as the one by Silvio de Majo and Augusto Vitale, we read that Chimica Lefèbvre was sold to Arthur Walter, an American engineer, but living in Naples. He was a man with excellent skills who devoted himself to the production of refined sulphur and then threw himself into the booming business of chemical fertilisers. However, there is no evidence that the factory was actually sold in 1887, the transfer probably taking place the following year, 1888.

Even at the end of the 19th century, in the rare existing photographs, the Walter factory (with which the Austrian Walter Finkler was associated) appears isolated in the countryside. It was then surrounded by new infrastructure and buildings from 1903 onwards. It was the first nucleus of what was to become, through various passages, the ILVA di Bagnoli.



In the 1895 cadastre, the first one available – the others seem to have been lost and are in any case not available at the Naples State Archives[40] –, there is a map showing the Walter factory, with the extensions ordered by the American industrialist who kept it until 1905, when it was sold to the Unione Concimi company.

The picture above shows a reproduction of the cadastral image of that year: the original Lefèbvre core is the wider, central one, closer to the sea and the beach, which is at the top of the map. The narrower buildings facing the street housed offices, warehouses and carpentry. The other buildings before and after that central body were extensions made between about 1890 and 1895 by Walter for the fertiliser factory.

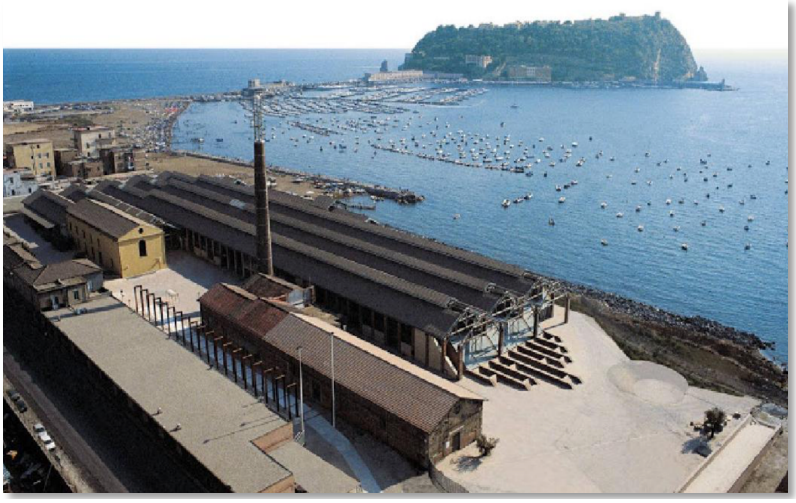
[40] As of 2020, after the fire of 2013, the remaining documentary complex of the Fabbrica della Scienza, with the history of the factories active there, has not yet been catalogued, even though it was 'poured' (i.e. moved to the Archive premises) in 2016. Its title is State Archives of Naples, *Fabbrica interconsorziale dei concimi e prodotti chimici della Campania*, 20th century, Room 168.

In the aerial photograph above, taken around 1930, one can see how the original buildings of Industrie Chimiche Lefèbvre were incorporated into other structures first by Walter and then by Ilva di Bagnoli. The petrochemical hub, the railway link, vast yards and much larger new buildings are now being built.

The area has not yet fully transitioned into industrial territory as one can still see boats, a vineyard in the foreground on the right and cottages. In addition to the factory, bathing establishments exploiting the rising sulphurous waters persisted until the 1960s.

Structure of Chimica Lefèbvre and subsequent extensions
Walter and Union Fertilisers.

A better appreciation of the original structure and later extensions can be seen in the series of photographs taken in 1993 on the occasion of the inauguration of the Città della Scienza and in the documentation produced at the time of its foundation. In the image above, for example, one can see the Chimica Lefèbvre building in the middle (the building with the chimney) divided into two bodies and the buildings on the left, where the entrance and warehouse were located. The warehouses on the seaside were later additions. Behind the complex, on the left, are the houses of the village of Coroglio.



Structure of the Chimica Lefèbvre and later extensions Walter and Unione Concimi. Aerial view. The distance does not allow one to appreciate the grandeur of the complex, especially when compared to the settlements of the mid-19th century, when it was built.

Even clearer is the second photograph, where the 'forgotten factory' can be seen in the middle and to the left. The building complex on the left was, however, extended by Walter around 1890.

Chapter 16

Déperais a Suez

After the sale of the factory, Charles Déperais thought of ventures of his own. Ernesto Lefèbvre died shortly afterwards, in 1891, and it is unlikely that Déperais was on good terms with the late Count's sons. Not with Carlo, who was disinherited at the time, nor with Francesco, who was in any case engaged in the laborious liquidation of all the family companies, with various steps that began in 1893, including the sale of the large palace in Piazzale Amedeo. On the last relations between Ernesto and Déperais, and on their relations in general, we unfortunately do not have any documentation or correspondence.

Charles Alexandre Déperais worked during the 1890s on a project to produce strong glue by setting up the Carlo Déperais & C. company in San Giovanni a Teduccio, which was liquidated in 1898.[41] In the 1887 deed that is commented on below, Ernesto Lefèbvre had detached the Chimica Lefèbvre from Cartiere del Fibreno, with the deed signed by the plenipotentiary Pietro della Posta, Duke of Civita and Lefèbvre.

Subsequently, Déperais went to visit his son, Luigi, in Suez in the autumn of 1900, and died suddenly there on 16 November 1900. Luigi Déperais, a sea captain and consular agent for NGI (Navigazione Generale Italiana – Società

[41] *Gazzetta ufficiale del Regno d'Italia,* No. 160, Wednesday 13 July 1898, p. 1388.

Riunite Florio & Rubattino), had been living in Egypt for years. The secretary of the Reale Istituto d'Incoraggiamento in Naples, Luigi Miraglia, in the introductory report on the work carried out in the year 1900, read at the academic session of 10 February 1901, announced the news of the scientist's sudden death with these words:

> And now I have the painful task of remembering the loss of one of our colleagues, Carlo Déperais, one of our oldest members, a very talented industrial chemist, a hard-working man of initiative, whose actions were deployed for many years in various establishments. With a good-natured, lively and open disposition, an agile mind, and pleasant and agreeable manners, this old man was well liked by all, and there was general mourning upon learning of his death.

The publication of his last patent for the preparation of a fire retardant applicable to textiles, wood and other combustible materials came out a few days later, on 23 November 1900. Twenty years later, none of his sons lived in Naples any more. One of them, Vittorio, an industrial chemist, had moved to Allumiere, in the Rome area, many years ago and specialised in fertilisers. His patented fertiliser, Empyreumatic Lime, composed of potassium sulphate and carbon derivatives, had fertilising and insecticidal properties, and was successful among the farmers and vine growers of Allumiere and the area to combat diseases such as powdery mildew, anthracnose and phylloxera. He died unmarried and childless in Allumiere in 1896 and was buried in the Brandt chapel in Civitavecchia, where his mother Paolina Achard (who died in Rome in 1895) was buried.[42]

[42] Déperais's wife's sister Maria Brandt (died in Rome 1914) would be buried in the same place. His sister Virginia Déperais Montanucci, who

Another unmarried daughter of Charles, Clementina, went to Suez around 1923 where she lived with her brother Luigi, vice-consul of Italy. Carlo, Luigi and Clementina were all buried in Egypt.

died in Rome in 1937, had been the wife of the lawyer Achille Montanucci, later mayor of the city of Civitavecchia, since 1880.

Chapter 17

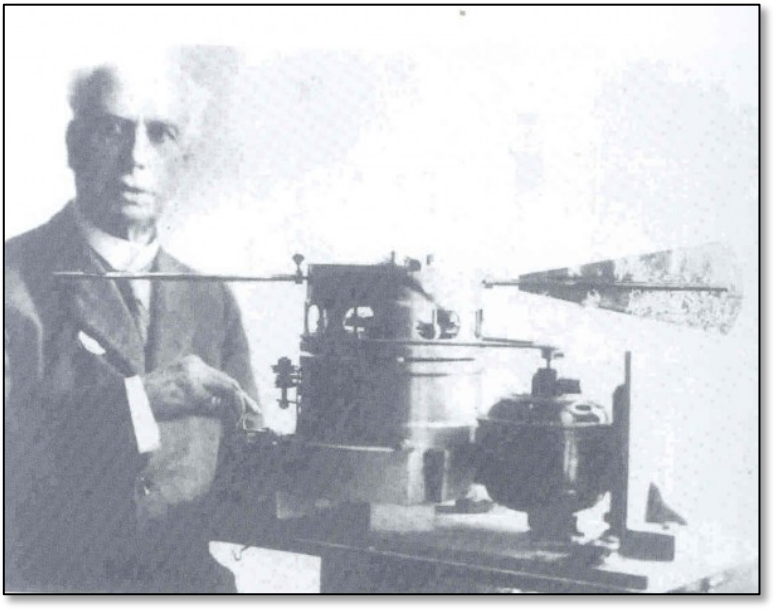
The biviar

The timing of the sale of the Lefèbvre factory coincided with remarkable events, with what could have been a crossroads in the history of Naples, but which did not have the outcome hoped for by those promoting it. We are alluding here to the possibility of great urban development that was to have its heart in that very place crossed by the Via Coroglio and that was promoted by the English architect, of Neapolitan adoption, Lamont Young (1851-1918).

It was precisely in 1887 that the long design process that Young had been working on for over 15 years came to an end. It was the third proposal he made, one more visionary than the others, but all perfectly feasible if the capital could be found. He proposed transforming the Bagnoli plain into a maritime station similar to those on the Adriatic but also in England, with glass palaces, a large hotel, and elegant but also affordable infrastructure.

He also planned an underground railway, which was to pass through the Posillipo hill via a tunnel, and which was to unite the various parts of the city in a modern way. He also planned a new quarter built on islands, the Quartiere Venezia, which was to be joined to the city by the metro and a canal almost two kilometres long. His was a radical, and also far-sighted, rethinking of the Campi Flegrei, which were to return to their original vocation – tourism – albeit in a modern way. It is striking that in that very year his focus was entirely on Bagnoli

and Coroglio. A great deal of land was needed to create the tourist hub of Bagnoli, all the land on which Lefèbvre was built: a well-equipped spa and seaside resort had to be built, with a hotel, a theatre, a modern promenade, large bathing establishments divided into three buildings, swimming pools for men and women, a two-kilometre stretch of beach, which was even planned to be covered in some sections, so that 10,000 even 20,000 people a day could bear the sun and enjoy the benefits of the sea.



Lamont Young around 1920, by which time the Bagnoli project had been forgotten.

This is not the place to describe Young's ambitious project, which was technically feasible and only needed adequate capital. Rather, it is the place to speculate on a crossroads of

destinies. Between 1884 and 1886, the project, which included the purchase of the entire Bagnoli plain, had been discussed by the Municipal Technical Council, which had evaluated it positively and then voted in favour. It was then the time of the cholera and the idea of renewing large parts of Naples in what was called the Risanamento was taking shape. Young's plans embraced the idea of lightening the demographic burden of the Spanish quarters by moving many inhabitants to satellite districts.

The Nuova Bagnoli project was rediscussed in the summer of 1887 and approved by the municipal council on the basis of a favourable report by councillor Gaetano del Pezzo, Marquis of Campodisola.[43] There was therefore a green light that only lacked signatures. Signatures, incidentally, which were announced. A few months earlier, but still in that year as we have seen, Ernesto Lefèbvre entrusted Pietro della Posta, Duke of Civitella (1850-1922), with the management of the industrial complex, evidently with the task not only of managing it but also of seeking opportunities to sell it to the highest bidder. A 'best' bidder evidently did not exist at the time because he was not appointed. Not appointed, Walter, for example. Or was he waiting for a more interesting one to emerge, i.e. Young? The notary, referring to Lefèbvre, wrote: 'The same notary has declared to me that having detached from his company in the Stabilimenti del Fibreno, the Chemical Products factory in Contrada Coroglio ai Bagnoli near Naples on the first of January, taking the administration upon himself, and not being able to look after it himself, he has appointed Signor Pietro della Posta Civitella'.

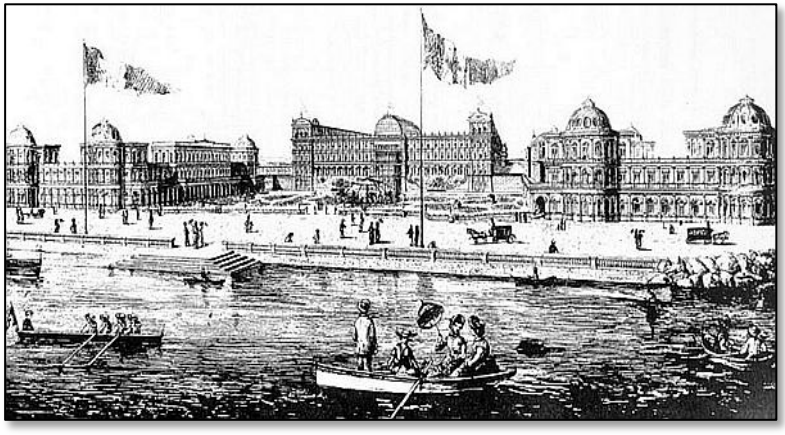
[43] I reconstruct Young's story from the pages of Francesco Barbagallo, *Napoli Bell Époque*, Laterza, Rome-Bari 2015, p. 30 ff.

The appointed Duke of Civitella is said to have lived in Bagnoli, contrada Coroglio, in the factory. It is significant that Ernesto Lefèbvre did not entrust the management of the complex, which, it should be noted, was not declared for sale, to his son Francesco but to a trusted third party. He, on the other hand, could not take care of the factory himself and writes this clearly. He left all decisions in the hands of his deputy. We know from his cousin's diaries that the last years of Ernesto's life were difficult due to rheumatic problems, which made walking difficult. Probably, Ernesto Lefèbvre was ill: we have to consider that, even if he was not old (he was not even 70 years old), he would have died within a few months.

We know that in those same months he had to deal with a painful family affair involving his son Carlo, who had caused the family to lose a lot of money and had also jeopardised the finances of the Cartiere del Fibreno and the Stamperia del Fibreno. Perhaps it was also for this reason that he delegated, something he usually did not do. We do not know, however, when the mill was actually sold. The deed by which Ernesto Lefèbvre gave full powers to Pietro della Porta Civitella makes no mention of any sale negotiations: the deed of 20 January 1887, therefore, is not a sale, even though it is listed in the Naples State Archives under the generic heading 'Contracts of companies' of sale. Nor is there, at the moment, any evidence to suggest that the whole plain, or the vast portion of it that for two kilometres from Coroglio and 300 metres wide from the sea had been purchased by Lefèbvre, and still belonged to this family in 1871, was sold before 1888.[44]

[44] Also in the article in *Meridiana*, Istituto Meridionale di Scienze Sociali, Naples 2001. p. 64, the sale or settlement of Walter is mentioned: 'in the former factory of Ernesto Lefevre the chemical company founded by Arthur Walter was established in 1887'. As well

In these documentary gaps, we can then turn our attention back to the Lamont Young affair: on 13 July 1888, after various degrees of approval, a resolution had been passed by the Giunta (38 votes to 12) for the construction of the metropolitan railway in the Venice and Campi Flegrei (Bagnoli-Coroglio) districts, which was to involve the acquisition of the entire plain.



The Coroglio beach in Bagnoli in Lamont Young's project approved on 13 July 1888 by the Naples City Council.

The resolution made a concession of 85 years and granted six months to raise the necessary capital for the great work, at least 40 million lire. The time granted therefore expired on 13 December 1888.

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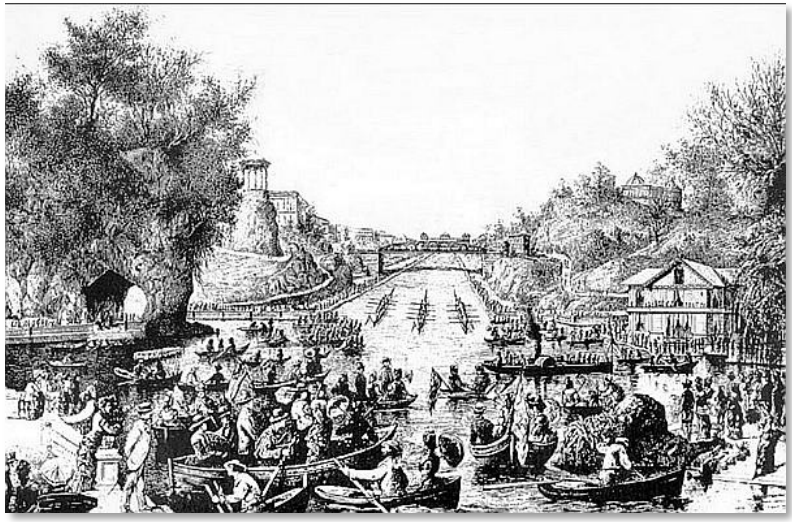
as in Ilaria Zilli, *La natura e la città: per una storia ambientale di Napoli*, Edizioni Scientifiche Italiane, Naples 2004, p. 128, where it is repeated that Walter's factory was 'located' in 1887 on the Bagnoli site, but without bringing proof. This could be, but without documents we do not know the exact timing of the transaction.

Why, with this deliberate grand plan, was the factory changing hands to Arthur Walter? Would the latter have eventually resold the land to Young's company? This is hard to believe, despite the fact that Silvio de Majo and Augusto Vitale write that 'in that same year [1887] the factory was owned by Arthur Walter, an American-born chemical engineer'.[45] We can then assume, pending further clarification of the steps, that the Duke of Civitella waited at least until 13 December 1888 before finalising the transfer of ownership. By the end of that year, in fact, Young was supposed to have found the money for his work, but he did not and so ownership passed to Walter. Perhaps that intermediate phase involving the Duke of Civitella was designed precisely to allow that transition and await the outcome of Young's project, which had a well-defined time frame.

In the end, however, Young's dream district was not realised like all his other projects. Indeed, it could have attracted hundreds of thousands of tourists to an area that was then renowned for its clean water, surrounded by greenery and hot springs, ruins and monuments.

[45] Silvio de Majo-Augusto Vitale, *Alle origini della Città della Scienza,* op. cit., p. 32. The sentence has no documentary support.



Unfortunately, investors did not respond, neither domestic nor international. Above all, the British, on whom Young counted so much, did not respond. Bagnoli was thus consigned to a phase of industrial destiny that disfigured its image, even though for many decades it employed thousands of workers.

Young's project was not completely abandoned, at least in its fundamental concession. In 1914, Francesco de Simone, the author of an urban plan, had thought of building a holiday quarter precisely in Bagnoli.[46] But it was too late, powerful interests in the industrial field dominated the destination of the area.

[46] Gabriella Corona, *Industrialismo e ambiente urbano. Le molte identità di Bagnoli*, in *Industria ambiente e territorio. Per una storia industriale delle aree ambientali in Italia,* edited by S. Adorno and Simone Neri Serneri, eds., Il Mulino, Rome 2009, p. 193.

Chapter 18

Recovery of the building of Chimica Lefèbvre in Bagnoli

The original factory on the seaside of the Coroglio road, which had an international type of construction, as we have seen, i.e. widespread in France as in Germany, and for this reason, also interesting, became part of an area of larger factories built in the decades following the sale of the Lefèbvre property and then Walter until the Montedison management and beyond.

The area comprises a series of buildings parallel to the road, two of which belonged to the Lefèbvre factory as shown in previous chapters. The first, on the street, contained housing, warehouses, porter's lodge and offices, and the director's house, and is largely of 19th-century construction by the Lefèbvre management with extensions by the Walter management. Then there are five long buildings, the longest of which is over 180 metres enclosed by walls and built of red brick, divided into two sections and containing the furnace with the chimney.

This is the original mid-19th century construction. The four sheds downstream on the seaside, which are uncovered today, were built after the 19th century. The original breakwater and jetty built by the Lefèbvre management were demolished and rebuilt after World War II.

At the time of the factory's closure in 1993, scholars in the field of industrial archaeology made an appeal for the original Lefèbvre building with the Walter extensions to be saved as a rare testimony to the antiquity of a building type dedicated to chemical production in the mid-19th century. The Centro di Documentazione e Ricerca per il Mezzogiorno made a significant appeal to the Superintendent of Architectural and Environmental Heritage of Naples, Mario de Cunzo:

> The buildings of the *Fabbrica Interconsorziale di concimi e prodotti chimici della Campania*, currently owned by the Italian federation of agrarian consortia, constitute a precious and perhaps unique testimony of the linear typology of the 19th-century industrial building, now so rare in Neapolitan urban structure, together with a unique piece of historical industrial environment.
>
> They form an integral part of it, in a complex aggregation of buildings and industrial artefacts, the wall textures in typical materials (brick, piperno, tuff), the characteristic wooden trusses, the surviving chimney and the unusual relationship with the sea. The cessation of production activities [...] makes the complex a possible prey to speculative programmes on the area in such a valuable strategic position, the main consequence of which would be the disappearance of the buildings that stand there and the irreparable cancellation of the historical evidence deposited there.

The Association therefore asked for its reuse for activities 'of an executive or advanced tertiary type'. Some time later, the Superintendent responded publicly with a communiqué in which he wrote that, having assessed the architectural interest – limited to the oldest part of the complex – the procedure to impose the constraint to ensure its preservation was begun. In a subsequent communication dated 4 November 1993, the President of the Association for Industrial Archaeology and

the Municipality of Naples were informed that the bonding procedure was underway for an area deemed to be of 'notable historical architectural as well as environmental interest' and in consideration of the notable testimony of the artefacts present there as examples of industrial archaeology.

The constraint was aimed at reusing the area and restoring the architectural structures. The rest of the vast disused plant, much of which had to be cleared of toxic waste, thus became a ruin to be eliminated, and only the part that had originally been designed and built by Charles Lefèbvre, Ernesto Lefèbvre and Charles Déperais, the real author of the choice of building typology that attracted the attention of the Superintendent and experts, was saved. The intention was to place the Lefèbvre nucleus of the factory alongside similar initiatives undertaken for Corradini (a metallurgical factory owned by a Swiss-Neapolitan family) and the Bourbon Officine di Pietrarsa.

DOCUMENT 1

Judgment.
Court of Naples, 25 February 1872

The inversion of title legally occurs when possession begun under a title other than that of owner is changed into a possession *animo domini*, and when the precarious possessor causes the thing to pass to a third party and constitutes in that third party's favour a right of ownership that is lacking in him. The third party begins to possess according to the title by which the thing was transferred. The beach is not a public good in its nature like the lido.

Beaches, however, are included in the number of assets declared inalienable by Article 430 of the Civil Code and consequently are to be held imprescriptible when they are part of the public domain and not when they have ceased to be destined for public use.

Hearing of 5 April 1872 - Cav. Morrone Pres. of Section with the preserved rank of Proc. Gen. External Cav. de Simone - Intendant of Finance and Count of Balsorano.

1) *Is it to be expected in order not to receive, to have varied from the first request?*
2) *Is the plea of lack of action appropriate and well-founded?*
3) *Is the beach that the Inland Revenue wants to claim a prescriptible asset?*

4) *In the affirmative, the conditions necessary for the statute of limitations to run are fulfilled*

5) *How is the immediate demolition of the landing stage, rocks and artificial dunes to be arranged?*

6) *What about expenses?*

The court ruled as follows.

In fact.

On 18 May 1860, the State Property Office explained to the Board of Intendants that the late Count of Balsorano had built a large building on the beach at Bagnoli as a chemical laboratory. And he had later extended it on the lido side with other works, including a factory landing stage. He therefore asked for measures to demolish these unauthorised works.

An expert opinion was ordered and carried out.

From the same it appears as follows:

Determining the limits of the ancient beach;

The measure of the same in the limits, i.e. as far as the maximum winter flood reaches, in ancient Neapolitan moggia measure 36 and square palms 36,358.

The measure in Neapolitan moggia 18 and palmi 8412 of that part of said beach, which is invaded by the same winter flood, at metres 31.75 from the limit of the calm sea at low tide.

the measure of the beach according to the faith of stack 1821, in the same of moggia 20. The true one found by the surveyors of moggia 16 and palmi 36,358.

The Balsorano plant was built on its own land, minus the southern boundary wall on state land.

The factories made outside the factory on State property.

The stalls made on the arena for access from the southern part of the establishment to the sea, built on state land.

The rocks put at the end of the slab, on state land.

These reefs do not actually produce any damage or protraction of the beach.

On that occasion, the Count of Balsorano exhibited the title of purchase of the dune at Bagnoli, the same dune donated by King Alfonso of Aragon to Cola Sannazzaro in 1457. This title is dated 21 April 1854.

The demanio in turn produced other titles to prove the true extent and nature of the estate owned by the Venuto di Accaja lords, successors of Sannazzaro.

Then, on 10 April 1865, the Count of Balsorano asked the said council for permission to sue those who had sold him the beach and lido as freehold, so that they could assume the burden of the dispute.

And the demanio, with a petition dated 29 of that same April, insisted on the release of the entire moggio a 36 and palmi squared 36,358 as those which, having been granted for grazing use only on a private basis, had reverted to the demanio, in accordance with Article 7 of the Law of 2 August 1806.

He said he insisted, subordinately, on the release of moggia 16, palmi 36,358, the difference between the total extension and the moggia 20 registered to the Duke of Accadia. And, gradually, for the release of 13 moggia and 8,412 palmi of soil not subject to any occupation or use whatsoever as indispensable to the spreading of the waves.

He demanded the demolition of the unauthorised works and claimed damages and interest and costs.

Before the Civil Court of Naples for Balsorano, among other things, it was asked to declare that there was no need to

deliberate until the summoned parties were called in garentia; and on the merits, to reject the request: to gradually declare the action of the state property prescribed; and more gradually to order a new survey.

And the court, in its ruling of 1 May 1868, rejected some preliminary objections, including that of the nullity of the deeds drawn up before the administrative litigation authority. It observed that Balsorano had not shown the original concession title to Sannazzaro. That the only useful equivalents were an istromento dated 10 January 1651, with which one of the Venuto family had constituted a federcommesso to his son, and a banknote of 300 ducats dated 22 March 1695, with which the same Venuto bought back the 1457 transaction in settlement of a dispute. So without prejudice to all the other mutual reasons of the parties, he ordered a second survey to ascertain if the works built by the Count of Balsorano in the plain of Bagnoli exceeded, and in how much, the limits of the ancient surface of pastures and grasslands mentioned in the istrumento of 16 January 1654 and in the bancale of 22 March 1695; whether he kept occupied, and in what way, and for how much, the actual seashore bordering that plain; and whether the works had ever caused or were about to cause damage to the beach, or to the port of Nisida, and had ever been or could be an obstacle to the perfect observance of the laws of the State concerning seashores.

Both parties appealed from that judgment.

The State Property Office requested that the demolition of the illegally elevated works be ordered without further order. Subordinately the claim for the part of the 16 mogge, constituting the lido and the beach over which the waves spread, was allowed. Gradually extend the assignment of the experts.

Balsorano insisted that the demanio's action was time-barred or that the statute of limitations issue was not affected.

These claims were rejected, and the second survey was carried out.

The second experts opined:

1) That Balsorano, by the concession of 1457, is the owner of the entire Bagnoli beach that runs from Monte dei Sassi down to Monte Coroglio.

2) That the factory landing in the sea, the rocks and the artificial dunes may cause damage to the port of Nisida, but not to the beach.

3) That with the new constructions no part of the actual seashore was kept by them determined, hence the corner of the glassworks, the ruins of the factory landing and a portion of the artificial dune falling on the repeated area of the demanio.

On 25 October 1870, the Intendancy of Finances, in reproducing the case, deduced that the action of the demanio had as its object the revindication of the entire beach among the properties conditionally and temporarily donated by King Alfonso of Aragon to Cola Sannazzaro in 1457, and as a consequence of the revindication the demolition of the works illegally built on State land should be ordered.

He noted from the survey that the new buildings occupy the land whose usufruct had been donated to Sannazzaro.

That the magistrate was not bound by the investigations he had ordered.

That the release of the entire beach was to be ordered as a consequence of the abolition of the prohibitive rights, of the exclusive right of demanio to possession of the beach, and of the return of the assets due as well for the extinction of the line

of the donee as for the many alienations forbidden by the donor.

The Court, in its judgement of 15 February 1871, held: that the action of the demanio was directed to the revindication of the beach to the Bagnoli; that of the titles exhibited by the Count of Balsorano, only two could be valid as equivalents of the primitive title of King Alfonso's concession: i.e. the istrumento of 16 January 1651 and the bancale of March 1695; that from the former it results how the donation, for the sea, consisted in the right to fish, and for the marinas and the territories near the beach, in the right to herbage and pasture; that it appeared from the bank that the beach at the Bagnoli was granted precariously to Sannazzaro, and likewise to the descendants of Trojano Venuto, that is to say, for certain lines; that since the beach was alienated to third parties and owned by third parties, the demanio rightly claimed ownership; that since it was a matter of precarious possession, it could not be subject to limitation; that the cause of the dispute was the construction work done on the beach, to the detriment of the beach and the port of Nisida; that if the right to revindication was to be exercised, it was necessary to order the demolition of the works; that for the other works built it was first necessary to ascertain by means of an expert's report whether they could be easily removed without destruction and if not, whether they would be useful to the Revenue Office. Consequently:

1. He declared the entire beach of the Duna ai Bagnoli, previously owned by Balsorano, to be the property of the said Intendancy.

2. He condemned the same to demolish the part of the factory landing that extends to the sea, the rocks and the artificial dune within four months.

He reserved the right to decide on the requested demolition of the other works as a result of the preliminary investigation.

Balsorano appealed on the following grounds:

the litigation was transformed by what was the subject of the action against the judgement. It was about damages and therefore a claim was made.

The instruction first ordered by the Prefectural Council poured over the reported contravention or damage to the port of Nisida. And so did the other instruction order by the Tribunal confirmed by judgment of this Court.

The works built by Balsorano are not harmful either to the port of Nisida or to the beach, as shown by the latest survey.

In law, it is not the state property that is the interested party in damages, but the authority specified in the Merchant Shipping Code and the public works laws.

The concession was only temporary.

The absolute ownership of the authors of Balsorano was recognised by the supreme authority of the state through the sovereign approval given to the two stipulations of 16 December 1829 and 12 November 1835, with the first of which the general superintendency of health was granted three moggia of land by the authors of Balsorano, and with the second the city of Naples another part of the same dune.

However, the action was said to be inadmissible and to be dismissed or gradually to be declared time barred.

On the first. In law

It is said for the Count of Balsorano that the action was transformed; since where in the 1860 libel it was narrated that the port of Nisida was being damaged, so much so that an instruction was ordered by the Council of the Intendancy on this subject; subsequently a question of state property and an action for the reclamation of the beach already granted to Sannazzaro was brought. It should be added that the first claim had become res judicata, i.e. the sentence of this court that rejected the appeals against the sentence of the civil court that had ordered a second survey to verify the damage.

That the request was varied is doubtful; but it is also undisputed that it was varied before the pronouncement of the sentence of the aforementioned court of 1 May 1868, confirmed on appeal, in which the exception regarding the transformation was discussed. Indeed, the Demanio and Taxation Directorate, by petition dated 20 April 1865, addressed to the Prefectural Council, requested the release of 12, 46, 15 hectares, as those which, having already been granted for grazing use only, had rightfully reverted to the Demanio. And as a consequence, the order for the abusive works to be demolished was requested. The same was repeated in the acts of 2 and 22 November and 7 December 1867, before the Civil Court of Naples. With the respective final pleadings, the Count of Balsorano defended himself with regard to the request for release, and with regard to the value of King Alfonso's concession, he asked for the rejection of the request. And the demanio concluded, declaring that not only the beach and the sandy ground belonged to the demanio, but also the entire land that was once grassland and pasture, and that he had ordered its detachment.

The Court observed, among other things, with regard to the amended claim, that when the survey was compiled, the

ancient titles had not yet been produced for Balsorano, from which he claimed to derive the right of private ownership over the beach. Therefore, the Court reasoned about the petition of 16 January 1851 and the banknote of 22 March 1695.

After the second appraisal, the intendenza di finanza, explained its previous claims more clearly, in the sense of a revindication of the property already donated to Sannazzaro. It brought the case back to the court hearing, first of all demanding the release of the entire beach. And by the band of the Count of Balsorano, the discussion of the petition in this last form was accepted.

But leaving the judicial contract to one side, it is easy to see how far the species is from the case where, fearing a contradiction of judgments, the school poured itself into examining how far the brocardic rule was applicable: *Electa una via nondatur recursus ad alteram*. And applicable was not when a second action was founded on a different cause of action. In that case the rule in Law 132 *De regis iuris* applied*: Numquamactiones de eadem ree concurrentes, alia aliamconsumit*.

In the present case, before a final judgement had been rendered, the application had been varied, and some more relief had been given as to the object itself, and so varied it had fallen into dispute, and an instruction had been given. Now it would be strange to say that what could be deduced even after the judgement, could not be done before, i.e. to vary the application as to cause and object.

For the aforementioned reasons, this first plea cannot be upheld.

On the second

The preceding remarks may go some way to showing also the inappropriateness and non-existence of the other exception, that of the lack of action in the Intendancy of Finance.

The deficiency was deduced specifically with regard to the original content and purpose of the application, on the assumption that it should have been judged in this way and not in its transformed form. It was said that the action for damages brought by the Demanio was not within the jurisdiction of the Revenue Office, which represents the State property and not the Demanio, which is not the property of the State or of anyone else. Now it is to be examined whether the application that has been discussed and judged, because of its form, cause or nature, and its object, can be subject to the aforesaid exception, or whether it is not, after its already considered variation, inappropriate and out of place. The interpreter, the legitimate expositor of the true content of a claim, is certainly the claimant himself. Now the Intendenza di finanza, after having demanded the release of the beach against Balsorano since 1865, in the deed of 25 October 1870, in reproducing the lawsuit, concretised and clarified its previous claims, saying: that his action had as its object the revindication of the entire beach, among the various properties conditionally and temporarily granted by King Alfonso to Sannazzaro, in 1457, and that as a consequence of the revindication the demolition of the works should be ordered, precisely because they occupy the land already granted. On the contrary, seeing that the investigations ordered by the magistrate no longer corresponded to these requests, he deduced that the investigations ordered limited to the occupation of the beach were completely idle, when the entire beach had to be released and the building demolished, since it had been proved to have

been built on the beach owned by Balsorano as assignee of Sannazzaro.

On this last area of contention, the lack of action was not pleaded and defences were raised, so that the Court discussed and ruled no longer on the ancient claim for infringement and damage, but on the claim for revindication of the beach.

Hence, firstly, how late and prejudiced was this plea of deficiency, and secondly, how untimely it was when opposed to the original claim of the demanio. It does not require much argumentation to prove that the conception against the content of the last application, which formed the real object of the discussion, was unfounded.

The reason for the claim was first that the count had made expenditures on land that was not his own but public land: later it was, on the contrary, this; that the count had built on land that he believed to be his and was not, on land that was not public land, but was proper state property.

Nothing was said about King Alphonso's concession being made of an inalienable thing: on the contrary, it was claimed to be in compliance with the conditions imposed.

It is a matter susceptible of revindication, only that which is susceptible of domination, whether of the State or of the private individual. How, then, could the Intendancy, in claiming the return to the State's patrimony of property that is in a private individual's domain, be lacking in action?

Which exception, on the other hand, would contradict the exception and interest of the possessor Balsorano himself. For how would he have brought up the ancient and recent titles of his acquisition and possession; how would he have believed he could object to the statute of limitations if the beach had not been susceptible of dominion and possession in law as in fact?

If he first defended himself by replying to the Demanio: You cannot harass me for what I do in mine, he must defend himself on the merits, when answered, but what you say is yours is no longer yours but mine, and I claim it back.

The Court held that the action of the Intendancy of Finance was revindicatory, and revindicatory of the whole beach. It then went on to examine the merits of said action, and did well. It no longer discussed the factual point, whether or not the works built by Balsorano exceeded the limits of the space granted, but ordered their demolition as a consequence of the revindication, which it admitted.

This judgement having not been appealed in any way by the intendant, the meaning attributed to it by its action remains res judicata. On no account, therefore, could a plea of deficiency be expected now, which, perhaps appropriate when it was raised, has since lost all sense of efficacy.

On the third and fourth.

The first judges, interpreting the title produced by the defendant, opined that the beach had been granted by King Alfonso precariously to Sannazzaro, and also precariously to the descendants of Troiano Venuto, i.e. for the sole enjoyment during certain lines. However, given the precariousness of the title, no matter how long the possession of 1695 until the institution of the judgement, it could never give rise to a statute of limitations.

But even assuming that interpretation to be correct, the court did not have to obviate Art. 2117 Civil Code, Art. 2145 LL. CC., which makes the statute of limitations run in favour of those to whom the possessors in a precarious capacity had transferred the thing as property.

As a matter of fact, Carlo Venuto, the last of the possessors in the lines contemplated, by memorandum of 4 July 1825, asserting himself as the owner and legitimate possessor of the beach or dune, granted it in perpetual emphyteusis for the benefit of a company formed to cultivate it between Carlo Venuto himself and Messrs. Giambattista and Raffaele Mugnoz, Antonio Pineda and Luigi de Ruggiero. Then, by another deed dated 20 April 1827, recounting the contents of the titles by which Carlo Venuto himself held absolute dominion over the dune, he declared that he had granted a small part of it in emphyteusis to the administration of indirect duties and to that of public health; and the remainder to the aforesaid company, that he had ceded his right over it to Mr. Tommaso de Franco by deed dated 20 December 1826, having reserved for himself only direct dominion with the rent of two years. 30. He then alienated and transferred to the said Messrs. Mugnoz, de Pineda, de Ruggiero and de Franco and also to Mr Giuseppe Jauch the aforesaid direct dominion over the beach and land at Bagnoli, confirming and recognising in their persons the entire and absolute dominion of the aforesaid fund, so that they could dispose of it as true and absolute. Eglino dispose of it as true and absolute masters and lords. And all for the price of 650 ducats.

Now these were the authors of the Count of Balsorano, who through Messrs. Errico Catalano and Ottaviano Cusutto, by instroment of 22 April 1854, purchased the dune in dispute. And leaving aside all the dominical acts exercised prior to the aforementioned instroment of 1825, 1826 and 1827, it appears that from the same years to that of the institution of the judgement before the Board of Intendance, i.e. 1860, the primitive title, considered precarious by the first judges, would be reversed by a time greater than 30 years.

Because, as is well known, juridically the inversion occurs when the possession begun with a title other than that of owner is changed into a possession animo domini, and when the precarious possession causes the thing to pass to a third party, and constitutes in his favour a right of ownership, which is lacking in him. The third party begins to possess according to the title by which the thing was transferred. It will be useful in this regard to recall the teaching of Cujacio. *Integra est domino rei vendicati osio emptor rem non usucaperit, quia non est dubium, quia cum fundum bonae fidei emptor usucapere possit, licet eum emerit a malae fidei venditore*.

And here it is not superfluous to point out, the good faith having been in all the contracting parties, that not only the various contracting parties, but the same public administrations, the same supreme power never doubted the legitimacy and perpetuity of the dominion in the various possessors of the dune, as can be seen in the emphyteutic concessions made in 1829 to the supreme magistrate of health, and in 1835 to the city of Naples, both of which were sovereignly approved. And it is because of an uneasy interpretation over elements that were taken as equivalents of the original title, that the Court came to the criterion of the temporary nature of the concession. For the above observations, the fallacy of the judgment appealed against is open in that it rejected the plea of limitation.

Nor would it have been usefully challenged on the ground of the dune's state ownership. This ground lost all importance after the transformation of the action for damages or infringement into the action for revindication, after the implicit recognition of the patrimoniality of the property, which without being susceptible of domination could not be revindicated.

Of course, only those things are not prescriptible, which are out of trade (Art. 213 Civil Code, Art. 2132 LL CC).

Now state property is not out of business: 'The state (Article 2183 of the Civil Code states) is subject to the same requirements for its property (Article 2114 of the Civil Code adds) as the particulars'.

If the beach in question had been in the public domain, in the time of King Alfonso of Aragon, as in the earliest times of the Romans, it could not have been alienated or in any other world granted for its use to a private individual.

It was granted because it was alienable, and alienable because of minor regalia, or revenue in the State Property. So that now by virtue of and not against that royal grant, as noted above, the Intendancy of Finance was able to bring the action of claim.

If one could disregard the necessity or logical limitation of this same action of revindication, one would not arrive at a different result.

It is true, that beaches are included in the number of assets declared inalienable in article 430 of the Civil Code and that consequently they are to be considered imprescriptible. But they are inalienable when they form part of the public domain (Article 427 of the Civil Code) and not when they have ceased to be destined for public use (Article 429 of the Civil Code), because in that case they pass from the public domain to the patrimony of the State.

When the Bagnoli beach (an asset that is not absolutely or by its very nature public, like the lido) was granted by King Alfonso, it ceased to be public property and entered the patrimony of Sannazzaro. And now it would not be a question of returning it to the public domain, which does not entail any dominion whatsoever, but of transferring it from the patrimony

of a private individual to that of the State: in which there can be no question of imprescriptibility.

Art. 406 of the ceased Civil Laws, although unnecessarily, explained that the land, fortifications, and bastions of war squares belong to the State, if they were not legitimately alienated, and their ownership was not prescribed against the State.

Thus it is that the law relates to the present condition of the thing, not the primitive one.

The Intendancy could not escape the dilemma: either the beach is public property, and therefore *res nullius* itself, and its action of revindication is inadmissible: or the domain can be revindicated by anyone, and even by the State, and the exception of prescription by the possessor cannot but be equally admissible. It has been said again, that it is the private individual who has endeavoured to strip the dune of its quality of public domain.

In truth, the meaning of the plea is not understood in law nor in fact.

Not in the obverse, because granted to Sannazzaro, the dune would have passed into the obverse of the private individual and remained *res nullius*.

Not in fact, because the concession was not made of a beach that was completely barren and sandy, and on the condition that no fruit would be extracted from it: otherwise one could not conceive the purpose of the grant. Indeed, in the 1695 banknote examined by the first judges, we read that King Alfonso granted Nicola Sannazzaro the sea *and the ruined casuleno with its adjacent territories, vulgarly called delli Bagnoli*.

Which also shows that it was not really a question of arenas or even of a real beach. Given that the property was not worth

very much, it could be induced that it was worth nothing when in the said year 1695, the Duke of San Teodoro paid duc. 800 in settlement of the Royal Court. This argument of the price of 300 ducats was held to the contrary by the first judges, who believed the sum of 800 ducats for a grant of perpetual dominion to be very vile, given the great value they considered the goods granted to be worth, whereas in our times, with the above-mentioned instroment of 20 April 1827, the direct dominion was alienated for no more than 650 ducats.

Lastly, the destination given by the concessionaire to the beach would be as little arbitrary as the same supreme royal authority sanctioned that houses be erected there for sailors' dwellings. And where these houses were, Balsorano built. But the remarks made are really of overkill, whoever considers that where the concession had not been, that part of the beach not reached by the extreme winter flood could have been acquired by prescription. Because *est litus maris, quatenus hibernus fluctus maximus excurrit Inst. 1, 26 p.3, de rer divis*. And if, according to what the experts have ascertained, the defendant possessed within the space beaten by the sea, it would not be for the Intendancy to revindicate that space, because *res nullius*.

Prescriptibility is an exception to the general rule, for the sole fact of public use over a given thing: now when the same has ceased and is piated in the interest of the patrimony as well as of the State, there is no reason to extend the aforementioned exception. Since, therefore, the plea of limitation must be admitted, it is right for the Count of Balsorano to appeal.

On the fifth

The court in Chapter 2 of the appealed judgement ordered the defendant to demolish the part of the factory landing place that

extends into the sea, the rocks placed in the sea and the artificial dunes. This demolition the Court ordered as a consequence of the revindication of the beach. In fact, before the same Court, the Revenue Office granted that, as a consequence of the requested release of the entire beach, the demolition of all the buildings constructed therein by the defendant was ordered, and subordinately the reduction of the factories insofar as they occupied the part of 5 hectares, 68 ares and 83 centimetres.

Now, since the judgement for Chapter 1, by which the entire beach was declared to be the property of the Intendenza di Finanza, cannot but also the other consequential chapter of the ordered demolition of the aforementioned landing, rocks and artificial dunes be revoked, with all rights, reasons and actions being reserved for this object if and in whose favour by law.

Orders that intendenza di finanza to pay the costs of the entire proceedings to be paid by Mr. de Simone.

On the sixth

The Intendenza di Finanza succumbs: it is therefore obliged to reimburse the defendant for the costs of the entire action.

For these reasons

The Court, definitively ruling on the appeal brought by the Count of Balsorano Ernesto Lefèbvre fu Carlo against the sentence of the Civil Court of Naples of 15 February 1871, revokes it. And doing what was to be done by the first judges, without dwelling on other exceptions preliminarily deduced by Mr. Lefebvre, it declares that the action brought by the demanio represented now by the Intendenza di Finanza of Naples for the revindication of the Bagnoli beach granted by

King Alfonso of Aragon to Nicola Sannazzaro, presently owned by Mr Lefèbvre, is time-barred. And therefore rejects any other application for the demolition of works built by the same Lord Lefebvre on the beach owned by him.

Without prejudice in whose favour, if, and as by law, every right, reason and action, in relation to works constructed outside the limits of the area possessed by virtue of the same sovereign concession, or that wherever constructed were detrimental to the public Demanio.

DOCUMENT 2

Transcription of deed

Amortisation Sales contracts. Commercial Court of Naples, 18 January 1887.

18 January 1887

By deed dated 18 January 1887 by notary Ferdinando Savona, registered in Sora, there 20 said no. 338 l. 3.60 ...., the Count of Balsorano Mr. Ernesto Lefèvbve appointed and constituted his attorney and vicar general with full powers, for the management, administration and representation of his chemical factory in Bagnoli, Contrada Civitella, Mr. Pietro della Posta Civitella conferring on him the power to accept bills of exchange, promissory notes and drafts for the company's needs, cancel them, endorse them and discount them, collect them, receipt them, appoint lawyers and attorneys and others as in said deed, a copy of which is left by said notary Savona to the aforesaid Count, on the 21st day of January is deposited in the registry of the Court of Naples for transcription, affixing and publication as required by law,

there 29 of 1887

The exi...

Luigi Imparato

Certified Copy pp. 270-275

Amministrazione del Demanio, Contracts of Sale, vol. XXII.

General Mandate – Directory Number 959.

General mandate Reigning His Majesty Umberto Primo by the Grace of God by Will of the Nation King of Italy, in the year One thousand eight hundred and eighty-seven on Tuesday the eighteenth of the month of January in Sora in the premises of the National Bank branch, Piazza Garibaldi. Before me was Ferdinando Savona of the late Francesco, notary resident in Sora with his office in Via Firmio, employed by the Notary Council of Cassino, with which I am registered, and in the presence of the witnesses to be named below. The most illustrious Count of Balsorano of the late Carlo, born and domiciled in Naples, and now living in Isola Liri, personally acquainted with me, the notary and witnesses, has personally appeared. The same Count declared to me that, having detached from his company of the Stabilimenti del Fibreno, the Chemical Products plant in Contrada Coroglio ai Bagnoli near Naples, at the beginning of January, and not being able to take care of it himself, he has appointed Mr. Pietro della Posta Civitella, in whose person he recognises all the desirable requisites for the management of the matter in question and has informed the trade by means of a special circular. That in the meantime it is necessary for the good rule and for the concrete explication of the assignment to provide the agent with legal proof of his powers to determine the scope he intends to fulfil by the present deed. Therefore, the Mr. Conte di Balsorano appoints and constitutes his Attorney and General Vicar with full powers for the management, administration and representation of his Chemical Works at Bagnoli, Mr. Pietro della Porta Civitella. In particular, he grants him the power to accept, for the needs of the company entrusted to him, bills of exchange, promissory notes and drafts, endorse them, discount them or endorse them with credit institutions and private bankers, collect bills of exchange and invoices from debtors,

collect postal orders, collect registered and insured letters at the address of the Bagnoli Plant, also receipt for Bank, make payments, make contracts for the supplies necessary for the production and sales of the plant's products, take care of the collection of debts of the factory itself and the execution of contracts, also in a judicial manner, being able to appoint lawyers and attorneys ad *lites*, to refer and report oaths, to answer interrogations and propose them, to attend "personal" appearances, to institute bankruptcy declarations, to intervene in credit verifications declaring the truth and reality of those for which the mandator concurs, to dictate agreements and oppose them. Finally, Mr. della Posta shall do whatever else he deems necessary and convenient for the best execution of the mandate, considering himself vested for this purpose with all other powers, even those not expressly specified. This will be posted and published in accordance with the provisions of the Commercial Code. And, having been so requested, I, the Notary, have received this deed in the presence of the same, Mr. Count of Balsorano, Lefèbvre, as well as Messrs. Ernesto Tronconi, landlord, and Cavalier Gustavo Mioni of the late Bartolomeo, Director of this branch of the Banca Nazionale. The former born and domiciled in Sora, the latter in Bergamo, suitable witnesses in accordance with the law, who sign the deed with me, Notary, and with the party. The present deed is a single sheet of paper, pages three, plus lines seven of the fourth; it was written by myself, the Notary; and was read by myself, in the presence of the witnesses, to the party who, upon my request, declared that its content is in accordance with his will. (271 verso) Count Ernesto Lefèbvre of Balsorano, Gustavo Mioni witness, Ernesto Tronconi, witness, Ferdinando Savona, of the late Francesco in Sora specifies:

paper l. 20. Writ lira 1. Repertorii, l. 0.50. Honorarium 10 lira. Archives 0.75 lira. Access lira 2.00.

Registration fee as follows: total lire fifteen hundred and forty-five cents. Notar Ferdinando Savona. Registered in Sora on 20 January one thousand eight hundred and eighty-seven. No. 338, f. 41 v.XXX. Public Deeds. Exact lire3 and centesimi 60. Receiver E. Giovene.

This copy, after collation, is certified to be a true copy of its original; it was written by a person of my trust and bearing my signature, to seal it I release it today 21 January 1887 to Count Ernesto Lefèbvre of Balsorano.

Ferdinando Savona, notary in Sora, specifies

Cards 2.20

Writing 1.00

Fee 2.0

Total Lire 5 and cents 40

Notar Ferdinando Savona

The year 1887 on 29 January in Naples.

At the request of Count Ernesto Lefèbvre of Balsorano, domiciled in Rione Amedeo and Pietro della Posta Civitella, domiciled in Bagnoli, contrada Coroglio.

I, Giovanni Ferrante, judicial officer at the Commercial Court of Naples, domiciled there for the office, declare that I have posted:

1) At the door of the aforementioned Commercial Court, located at Vivo Fico al Purgatorio ad Arco n. 1.

2) On the notice board of the City Hall of Naples, located in San Giacomo.

And to have released to read:

3) To the Stock Exchange of Naples located in San Giacomo copy of the following:

Extract from the deed dated 18 January 1887 by Notar Ferdinando Savona, registered in Sora.

Lì 20 detto, numero 338, lire 3, Giovene.

The Count of Balsorano, Signor Ernesto Lefèbvre has appointed and constituted his attorney and vicar general, with full powers, for the management, administration and representation of his Chemical Works at Bagnoli, Contrada Coroglio, Mr. Pietro della Posta Civita conferring upon him the power to accept, for the needs of the business entrusted to him, bills of exchange, promissory notes or drafts; endorse, endorse or discount them, collect, receipt, appoint attorneys, and act as per said deed, a copy of which, issued by said Notary Savona to the aforesaid Signor Conte on said 21st January, is deposited with the Clerk of the Court of Commerce of Naples, for transcription, posting and publication as required by law. Naples 29 of 1887. The Exhibitor: signed Luigi Imparato.

And I have drawn up the present, copies of which are signed by me, and copies of which I have written at the foot of said copies which as aforesaid have been affixed and released for posting.

This deed is also advertised in the legal announcements in the newspaper of the Prefecture of Naples.

Giovanni Ferrante.[47]

[47] Gazzetta Ufficiale of the Court of Naples, Year XII, No. 1, 1 February 1887.

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INDEX