UNIVERSIDADE DE ÉVORA

Mestrado em Gestão e Valorização do Património Histórico e Cultural

Master Erasmus Mundus TPTI

(Techniques, Patrimoine, Territoires de l'Industrie: Histoire, Valorisation, Didactique)

ESTRADA DE FERRO ARARAQUARENSE IN THE FRAMEWORK : The industrial landscapes of the West of São Paulo State as a heritage of the mobility

Fernanda de Lima Lourencetti

Orientadora / Sous la direction de : **Ana Cardoso de Matos,** Évora University

Co-Orientador / Sous la co-direction de: **Adalberto da Silva Retto Júnior**, Universidade Estadual Paulista "Júlio de Mesquita Filho"

Évora, Setembro de 2015 | Évora, Septembre 2015

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ESTRADA DE FERRO ARARAQUARENSE NO QUADRO:
A paisagem industrial do oeste do Estado de São Paulo como patrimônio da mobilidade.

RESUMO

Para aumentar o conhecimento sobre a influência das estradas de ferro no desenvolvimento do Estado de São Paulo no Brasil, foi elaborado um estudo capaz de reconstituir esta história. O impacto das ferrovias pode ser analisado em diferentes campos de estudo como no econômico, no urbano ou no tecnológico. O desenvolvimento do Oeste Paulista teve o sistema ferroviário como um ator de grande importância que acompanhou o desenvolvimento do produto mais importante para a economia do país, o café. Logo, mesmo tendo-se desenvolvido devido às necessidades de uma economia baseada numa grande variedade de produtos, as cidades da *Estrada de Ferro Araraquarense* tiveram seus primeiros trechos férreos financiados pelos cafeicultores. A ferrovia atraiu uma grande atividade industrial e causou muitas transformações urbanas nas várias cidades da região. Araraquara é uma das 71 cidades influenciadas pela linha Araraquarense. Assim como o início de um quebra-cabeça, o catálogo dos patrimônios urbano e industrial de Araraquara, ligados com a ferrovia, apresenta uma série de bens do patrimônio ferroviário ligados com o planejamento urbano e a mobilidade de mercadoria, pessoas e tecnologia, que até hoje não foram estudados nem valorizados e que devem ser preservados como elemento de identificação da região, tendo em consideração alguns exemplos famosos de preservação.

Palavras-chave: Patrimônio Industrial; Oeste Paulista; Ferrovia; Araraquara.

ESTRADA DE FERRO ARARAQUARENSE IN THE FRAMEWORK:
The industrial landscapes of the West of São Paulo State as a heritage of the mobility.

ABSTRACT

In order to improve the knowledge about the influence of railways in the State of São Paulo in Brazil, it was elaborated a study able to reconstitute its history. The impacts of the railways can be analyzed in many fields of study as economical, urban, or technological fields. The development of the western part of the State had the rails as an important actor that used to follow its main product, the coffee. Thus, even developing because of many different cultures, the cities from *Estrada de Ferro Araraquarense* had the coffee as the first sponsor of their railways. All the cities of the railway were able to attract a huge number of industrial activities and to cause many urban transformations. Araraquara is just the first city among of a total of 71 that was influenced by the

rail line Araraquarense. As the beginning of a puzzle, the catalogue of Araraquara's urban and industrial heritage, linked with the railway, is able to show many unexplored railways heritages linked to the urban planning and mobility of goods, people and technology, which must be seen as an identity of the region and should be conserved as some famous examples of preservation.

Key-words: Industrial Heritage; Western of São Paulo; Railway; Araraquara.

ESTRADA DE FERRO ARARAQUARENSE DANS LE CADRE:
Les paysages industriels de l'ouest de l'état de São Paulo en tant que patrimoine de la mobilité.

RESUMÉ

Pour augmenter la connaissance sur l'influence des chemins de fer vis-à-vis le développement de l'Etat de São Paulo, au Brésil, on a élaboré une étude capable de reconstituer l'histoire. L'impact des vois ferrées peut être analysé sur différents champs de recherche, tel que l'économique, l'urbain ou le technologique. Le développement de l'Ouest Paulista a eu le système ferroviaire comme un acteur de toute importance, une fois qu'il a accompagné le développement du produit le plus important pour l'économie nationale : le café. Ainsi, même en ayant se développer en vue des besoins de l'économie fondée sur une grande variété de produits, les villes de la *Estrada de Ferro Araraquarense* ont eu leurs premiers tronçons ferrés financés par les "cafeicultores" (producteurs du café). La voie ferrée a attiré une énorme activité industrielle et a causé de nombreuses transformations urbaines dans plusieurs villes de la région. Araraquara est une des 71 villes influencées par la ligne Araraquarense. Tel que le début d'un "casse-tête", le catalogue des patrimoines urbain et industriel de Araraquara, connectés à travers la voie ferrée, présente une sorte de biens du patrimoine liés à la planification urbaine et à la mobilité de marchandise, de personnes et de technologie, lesquels, jusqu'à nos jours, n'ont pas été étudiés, ni valorisés. Néanmoins, ils doivent être préservés en tant qu'élément d'identification de la région, en considérant quelques exemples de préservation très célèbres.

Mots-clés: Patrimoine Industriel; l'Ouest Paulista; Chemins de Fer ; Araraquara.

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- PhD Adalberto da Silva RETTO JR, who had worked with me on my graduation for two years. I was part of his research group and one more time he trusted me to continue the research;
- PhD Ana Cardoso DE MATOS, who advised me during the two years of the Master TPTI;
- The program of Master TPTI, which accepted the research and like this encouraged it to continue;
- The teaching staff from the Universities of Paris 1 Pantheon Sorbonne, Padua and Évora, which were able to teach their knowledge and help me with the research;
- All the visiting scholars and researchers invited, who were able to talk about their researches and experiences;
- The secretaries: Anne-Sophie RIETH, Evelyne BERREBI, Raffaella MASÈ and Helena ESPADANEIRA; who were available to help and solve all the technical and personal problems that could appear.

While I was developing the work other encouragements appeared, so I would like to thank the *Association pour l'Histoire des Chemins de Fer*, which gave me a scholarship during the period of one year, between 2014 and 2015. This financial incentive improved the research because it provided subsidy to let me make a comparison between my case of study and some French examples.

Other encouragements came from the companies of *Bateau-mouche, ACTV* and *Transtejo e Soflusa,* which made their selves available to help, and all the people that were interviewed or participated of this report in an indirect way. Among them, I would like to highlight my classmates with whom I could share some moments. They made me see all the effort that we are able to do to catch up our objectives looking always to the bright side.

To conclude my acknowledgements, I would like to let here a special thanks to my parents. Even passing thorough health problems they had strength to stimulate me and give me all the support that I needed during these two years. They were, and still are, my inspiration to face all kind of situations and there are no words to express that.

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PREFACE

The Master Erasmus Mundus TPTI (Tecniques, Patrimoines et Territoire Industriel) was an experience of two years that improved my scientific knowledge and some personal skills. To do part of this Master made me leave from my comfort zone to face different places and people. The whole process of adaptation happened three times because of the mobility that constitutes the program established to the course, which started in Paris, France, continued in Padua, Italy, and it ended in Évora, Portugal. The last semester variety according to the student and his tutor; I stayed in Évora, from where my advisor was from.

Thus, Paris was the first stop. I left my country, family, friends and job to live different kind of situations. The challenge started before the course, because I didn't know how to speak French very well. I crossed this line after I started to interact with the other students from the Master, to go to the language classes and to start to watch French movies and series. Currently I don't feel prepared to write a scientific paper in French, but I do can express myself and understand the others.

Besides the language, the daily life was full of news for me. The dynamic of the city and people were unusual. During the course I could see that I had already some skills to change my way of life. The university improved them not only because of the contact with other people, but because of the interaction that it provided between the students and the city. The seminars were exposed in different campus from the University of Sorbonne, which made all the students learn how to deal with the city. Sometimes the schedule was tight, but even like that, the experience worth it.

In the academic frame, the first semester was about "technical systems". Many seminars were given to show us the plurality of methods of study. The scientific exhibitions presented several methodologies and challenges that changed according to the researcher and the place. Features like nationality, social level or gender can simplify or complicate the course of a research, and in each situation the person needs to have the ability of rearrange things to try to get what is necessary to his work. So to this report this semester collaborated with the methodology and with the analysis of some "technical systems" that made part of the expansions of the industrial heritage in the State of São Paulo and of the urban grid of Araraquara. Like that, even without a detailed study about each "technical system" found, this knowledge contributed to the comprehension of some historic facts.

As a city full of different sources, during the five months that I lived there I could go to some places that were able to help my research. I went to many libraries like the Tolbiac Library, Center Malher (a library specific to the Master TPTI), Sorbonne Library and the Latin American Library. The last one has a sector called *Pierre Monbeig*, a French researcher that went to Brazil and, like it will be presented, it was taken as a referential to this research. Besides the libraries, Paris

is full of museums and cultural places like the *City of Science and Industry*, which has a sector about the evolution of the means of transportation in Paris, a good example of conservation to this report, and the *Musee d'Arts et Metiérs*, which has some examples of old infrastructures and elements, this one is more similar to the conventional museums, but it uses some reproductions of elements of the past to explain how they were built.

Some virtual sources like Gallica, which helped a lot on the execution of some working group, were presented by the professors. In the end, while I was searching for virtual sources that could be trustworthy, I found many Brazilian virtual sources like the *Arquivo do Estado de São Paulo* (it's the digitalization of some old documents of the Institutional Archive) and the *Revista Acrópole* (it is a website with the digitalization of an old magazine), both of them had materials able to prove some facts exposed by this report.

The second semester influenced my research in a more incisive way. The subject learned in the University of Padua was about the conservation, management and valorization of an industrial heritage. These topics were relevant to this thesis because they are the principal purpose of it. During the semester some visits to see some examples of preservation and reuse of an industrial heritage were done. This close contact made me understand more deeply the diversity of ideas that could appear to manage new functions and to conserve the buildings. These experiences "replaced" the number of sources found in Paris.

At the same time, other concepts were presented like the way that UNESCO (United Nations Educational, Scientific and Cultural Organization) operates; the management of some Italian inventories and museums; and the influence of the industry evolution on the development of an urban grid. The examples were in their majority from Italy, but I could compare them with some examples given in France during the first semester and like this I could apply what I understood in my analyses according to the necessities of the research.

Besides all the scientific knowledge in Padua I needed to adapt myself again. The language was similar to Portuguese and the city is smaller than Paris, so it was easier to adapt. In Portugal I almost didn't have problems, because I already had lived in Évora and people speak my mother tongue.

In Évora the subject was about the management and valorization of the technical heritage and the cultural landscape. These two topics together analyze the impacts of the infrastructure in the development of the society and the exchange of this kind of knowledge between engineers. They were currently used in this research, because some of the important subjects of it are the railway infrastructure, its development and what kind of impact it had on the territory expansion of the State

of São Paulo, more specifically in the city of Araraquara. So through this report some engineers and some technical systems, as already mentioned, are quoted.

During these two years all the students should do another report to present with the personal project in the end of the course. This other research was proposed by the program of the Master TPTI to make the students learn to work in group. Other smaller works were done in group, but this one needed to be managed thru the two years, what make its organization be more complex. The project was given as an instruct project, the class was divided in groups of five or six people who had different skills, cultures and knowledge.

In Paris after the division of the students in groups each one was presented to their tutor and to the theme that they should work with. In my case the main subject was Nautical Heritage, and the tutor was Charlotte Marland, but in Italy, because of some personal problems, the tutor was changed to Cyril Lacheze, who continued the work in the same way that it started. To start the project the group narrowed the scope and divided the responsibilities, while the tutor followed every decision just to guide and see if the work was being developed. So the theme was focused on boats that are currently used in Paris, Venice and Lisbon.

Besides of dealing with other people, the Collective Project provided some knowledge about the bureaucracy that a research can face. The same process of research was done in the three cities, because one of the intentions was to make a comparison between them. One more time the language and the mobility influenced the work.

The Collective Project helped me in my personal research and vice-versa, because both of them were about the valorization of a mean of transportation. My responsibility in the working group was to understand the evolution of the territory and the use of the boat, which is the same principal used in my personal project. We found out that other people tried to make the boats from Venice and Lisbon be known, which made us understand the difficulties of it, because even with some effort the history can disappear and the object can be forgotten. So to enhance the value of something the work need to go beyond the research.

Thus, as a Master thesis of the Master Erasmus Mundus TPTI (Tecniques, Patrimoines et Territoire Industriel), this report is divided in two parts: Personal Project and Collective Project. The main part is the Personal Project. The Collective Project was done to improve the students' skills of working in group with people from different culture and fields.

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The personal project will present the real value of the rail's influence on territorial exploitation and *Araraquara* is the first city of *Estrada de Ferro Araraquarense* in São Paulo State/Brazil, after it the train opened ways to the *Pioneer Fringe*, what brought a new kind of

development to cities of the new region. The lengthened of the rail and its stops made part of the urban history of many cities, some of them, known as *Bouche de la Brousse*, had a big influence on São Paulo's economy caused by the insertion of many industries.

Around 1930, with a national speech, the Brazilian government expanded paving roads to integrate the territory with higher speed, which caused a partial abandonment of the railways. This change brought lots of urban problems and left the railroads in complete disregard. Currently the railway started to gain a new look from different investors. According to *Revista Ferroviário* magazine some of these investors are French, so understand their railway evolution can improve the knowledge about this kind of industrial heritage in Brazil, which had a French influence since the beginning.

Thus, the research aims to rebuild the development of one of the four most important train lines in the western part of the State of São Paulo, *Estrada de Ferro Araraquarense*, to increase its value putting in evidence its responsibility on the industrial advance between 19th and 21th centuries. To increase its importance a specific analysis on Araraquara city was made, which is the first city of this line. Its study will provide a new way of understanding the relationship between the railway, as a spatial element and a place for new uses, and the arrival of many infrastructures.

Presently Araraquara will receive new industries that will improve the railway; according to a local magazine the population is hopping a new increase in their economy like they had when the train arrived. So, even still using the rail station as a museum, the city needs to understand its value and its relationship with the urban drawing. Therefore, to make a clear idea and to start a study about this kind of correlation in Brazil, examples as Paris, Lille, Marseille and Lyon, four cities that already modified their urban plan to integrate their trains to the urban grid, were took as referential.

The main idea is to show the importance of the railway in the cities, mainly its influence on the industrialization. Thus, the French inventory was studied as a base to understand how the railway impacts can be put in evidence. France was the first country to catalogue its industrial heritage, and because of that it was used as an example of management to improve the knowledge in this field. So, the previous inventory presented by this research intends to be just the beginning of many researches in this area of study.

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The collective project will be described in a more personal way. The theme given by the tutor was Nautical Heritage and the line of research chosen by the group was the relationship between some traditional boats, the rivers where they are used and the city where they are inserted. The aim is to understand if traditional boats like: Beautaux Mouche in Paris, Vaporetti in Venice and Cacilheiros in Lisbon, have a heritage value.

Along the research the group needed to know how to divide the work, so each one should present himself saying his specialties and skills. After found out that the common abilities in the group were in the audiovisual field, it was decided to make a video instead of a report. The research was divided by each one specialization. After all the material was collected, the group was able to discuss.

The development of the work was divided by periods following the three different universities that constitute the TPTI course, so the cases of study were chosen according to the location of these institutions. The methodology used was:

- First semester the lessons were given in Paris, so the research started focusing on Bateaux Mouche;
- Second semester the classes happened in Padova, so the Vaporetto was the second object studied;
- Third semester was in Portugal, so the Cacilheiros was the last one to be studied.

The knowledge acquired put in evidence the value of these boats. Even with opinions against their heritage potential, it was impossible to deny that the boats are part of the landscape and of people memory. They have an immaterial value known all over the world, because many tourists used them.

My contribution to this work was to do a research about the urban development of the three cities and its link with the river and the boat. The others searched about the history of the boats and their technological development. Some common points were found and they were used to understand how these boats used in the beginning as transport of goods and people are still working but with a new main purpose, to be part of the tourist economy.

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Thus, these two years of Master TPTI provided me more than an academic improvement, it made me see things from many different perspectives. This enlarged my comprehension about the world, people and my own personality. Everything that I was able to absorb will make a big difference in my professional life, because it gave me agility to manage problems and contretemps.

PART I. REDACTION OF THE PERSONAL PROJECT

Introduction

Araraquara has a rail history that began in 1885 and still goes on. The train infrastructure brought many immigrants and industries. When the station was built, the changes were more evident, but even with the decay of its use, which is currently based on the transportation of goods, the city receives many investments because of it. The solid infrastructure and its strategic location in the State encourage some big companies to install their filial branches in the city. So as a regional capital like Lille, Marseille and Lyon in France, Araraquara is an important start point to raise the industrial heritage value of São Paulo. The French look to the railway as a part of their urban grid, which makes the tampon zone of the train station a vital place. In Araraquara, even partially used as a museum, the railway has many abandoned points caused by the lack of planning to improve an intermodal way of transportation to give life and conserve this industrial heritage.

The development of the western region of the State of São Paulo is totally related to the railway development. Even after the paved roads, the rail continued to make part of this process. Until now the train is used, but its history and some of its buildings are getting lost, thus if they don't become a part of the daily life again, they will be forgotten and will disappear. To put in evidence the whole context of *Estrada de Ferro Araraquarense* and to start focusing on each city collecting their influences, the railway importance will be improved, and it will arouse the management of the industrial heritage of the State, a field that should be more explored in Brazil.

Due to these facts, the inventory helps to order and exam the current state of the industrial heritage of the city of Araraquara. The parallel between São Paulo State and some existing examples in France is used to give some basic ideas, since that the industrial heritage field is being studied there for longer time than in Brazil. The materials created during the research aim to give support to a virtual set to enhance the value given to the railway heritage. It is a start to configure the industrialization process of the pioneer zone of *Estrada de Ferro Araraquarense*.

Image 1 – Composition made to show the railway situation in the past and in the present.
Source: http://www.revistaferroviaria.com.br/ (2015)

> *"Não há como deixar de lamentar o abandono, a destruição de históricas estações ferroviárias e a erradicação de trechos pioneiros por força a nefasta Resolução 4.131/2013[1] da ANTT. Tem também a destruição homeopática de material rodante que vai sendo corroído pela ferrugem. A preservação ferroviária de antigas estações, rotundas, oficinas, trechos, sítios, locomotivas, carros, vagões, objetos, ferramentas, documentos, objetos não devem ser vistas somente como saudosismo ou exemplar de colecionadores. Trata-se de um presente do passado para se pensar num futuro melhor, menos poluído e mais civilizado em termos de transporte, passageiros e cargas."*[2]

The revitalization of the railroad space became important with the passing time. In France the inventory started to be done in 1984[3], before the elaboration of the concept of industrial heritage. In Brazil the cataloguing was initiated around the beginning of the 21th century and is supposed to be finished during 2015. The Brazilian inventory contains the description of objects and buildings directly related with the railway. However the importance of the railroad goes beyond its own collection, it brought other kind of industries to the cities and it influenced the urban space.

To catalogue the industrial and the urban legacy rose by the arrival of the train to a town can put in evidence the relationship between the development of the urban space and the development of the mobility. Currently, even after the decay of its use, Araraquara still receives industries related to the railways, for example, in 2015 the Ibayou CLK, a factory of condition air for trains, was inaugurated, and the Hyundai Rotem, an industry that produces trains, will be opened in 2016, both of them are south Korean[4].

Unfortunately, the industrial progress of the city is not compatible with the preservation of the railway heritage. Brazil is the only country where the trucks predominate. In 2012, 67% of the

[1] It is based on the deactivation of the railways considered uneconomical and gets all the investments that could be used on them to improve the railways that are currently used.
[2] PASTORI, Antonio, *Os 161 anos de ferrovia, na visão dos preservacionistas.* Article published in April 30, 2015, by http://www.revistaferroviaria.com.br/ (2015). There is no way but regret the abandonment, destruction of historic railway stations and eradication of pioneers excerpts by the force of the nefarious law "Resolução 4.131/2013" of ANTT. There's also the homeopathic destruction of undercarriage that is being corroded by rust. The preservation of old railway stations, roundabouts, workshops, snippets, places, locomotives, cars, wagons, objects, tools, documents, objects should not be seen only as nostalgia or copy of collectors. It is a present from the past to figure out a better future, less polluted and more civilized in terms of transportation, passengers and cargo.
[3] POLINO, Marie-Noëlle. *L'Association pour l'histoire des chemins de fer em France et le patrimoine ferroviaire*. Publised in Hitoriens &Géographes, nº 405, 2007, p. 145;
[4] http://www.revistaferroviaria.com.br/ (2015)

transportation of goods was done through the roads, while the rails transported only 18%.[5] These numbers don't match with the expenses, because the road system is more expensive than the use of the train. The reason why the highways dominated the Brazilian mobility is that the railway infrastructure has the characteristics of an industrial structure, so the first investments to this kind of transport are more expensive than the one necessary to build roads.

In the beginning of the 20th century, in a moment of crisis, the government privatized the rail lines, which resulted in a disconnection between them and the companies that got them didn't managed them very well.[6] Like this, while France and other countries amplified and improved their rail system with new connections and machines, the Brazilian railways stations were being deactivated.

Robert Willing, teacher of Princeton University, an American hired in 2015 by the *Banco Mundial* in Brazil to analyze the concessions given to the railways, believes that the European system is not a good solution to Brazil. In the European system, like the French example that will be presented, the government is responsible for the rails and all companies can use them, while the American believes that the monopoly and the construction of complementary lines could heat the market.[7] To emphasize this difference it will be presented that in France the *École des Ponts et Chaussées* was the responsible for the control of the growth of the railway, they took under consideration the collective necessities, while over the years in Brazil the railway was the result of the private capital and interests, a kind of monopoly.

However, the Brazilian railway system declined and many stations and passages were abandoned, while the French railway prospered. In 2015 in Araraquara, after ten years of popular demand caused by accidents that the railway caused in the middle of the city, it was built another station, a kind of contour, which avoids the train to pass through the city. Thus, the entire rail used before, that divides the city in two parts, can be doomed to disappear if the place doesn't become part of an urban planning. Besides that, all the legacy, which has already part of it missed, can be totally forgotten. The railway is part of the city and it remains can't be taken for granted.

> *"Articulating the past historically does not mean recognizing it "the way it really was". It means appropriating a memory as it flashes up in a moment of danger."*[8]

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[5] http://www.revistaferroviaria.com.br/ (2015);
[6] *Idem;*
[7] *Idem*;
[8] BENJAMIN, Walter. *On the Concept of History.* Gesammelten Schriften I:2. Suhrkamp Verlag. Francfurt am Main, 1974. http://members.efn.org/~dredmond/Theses_on_History.PDF (2015)

Since 2006, a group of teachers from UNESP/Bauru called SITU[9], coordinated by professor Dr. Adalberto da Silva Retto Júnior, started to work on the cities of the "pioneer zone" of the State of São Paulo to collect materials capable to be used to reconstruct the whole urban and transport evolution of each city of four railway lines: Sorocabana, Paulista, Araraquarense and Noroeste do Brazil. So these studies are the principal contributors to the inventory that focuses on Araraquara to increase the value of the *Estrada de Ferro Araraquarense*.

Another important investigator took as a guide was Pierre MONBEIG. He went to Brazil between 1930 and 1940. In his explorations about the development of the country, he felt some difficulties to study a society that seemed to be in movement. He was used to make his researches in France, where the territory scale was smaller, so even without being able to do a regional research, studying city by city, he acknowledged the importance of a more specific analysis to understand the logic of the pioneer development.

Even with the country mountainous relief and with its aggressive rivers, the "bandeirante"[10] risked his life as his father and grandfather did to find a good land and start a better life. The progress was right behind them, MOOG points that the lack carbon resources delayed the industrialization in the country, like happened in many countries like Spain, Italy, Portugal and France. The Frenches could move from feudalism to industrial economy a bit faster than the other countries because of its proximity to countries that had lot of carbon resources.

Keeping the last information in mind, and considering the mining as the most important industry in Europe in the beginning of the 19th century, it will make sense the point presented by VARGAS. He showed that in 1810 the Portuguese brought to Brazil this kind of exploitation, which resulted in the advent of the first national factory.

However, the coffee-industry is well-known in the history of Brazil. CANO found records about many machines that went there to give some support to the coffee agriculture after 1880. The binomial was able to create a new consumer market, and this was expanded after the British law "Bill Arbedeen". So the emergence of employs caused the arrival of many immigrants and the cities started to grow. Araraquara, founded in 1805[11], and its region had the immigration as one of the most important reasons for its development.

[9] The group continues its studies, which is internationally known as "The theoretical and technical knowledge on the configuration and reconfiguration of the cities emerged from the opening of pioneer zones in the west of São Paulo (Brazil)". I was a part of this group in 2009; my work is entitled "The circulation of hygienic precepts and technical innovations in the reconfiguration of the railway cities in the west São Paulo". By continuing my studies, I aim to improve and enlarge the group's project.

[10] This is the name given to people who explored Brazilian territory.

[11] LANÇA, João Felipe de Almeida. P*raças e jardins do oeste paulista. a configuração e transformação do espaço público com a introdução da ferrovia: Ramal da Alta Araraquarense* – IC – UNESP/2009, p. 31;

In France during the industrial age, between 1840 and 1950, the cities changed their urban planning. AGULHON, CHOAY, CRUBELIER, LEQUIN and ROCAYOLO[12] explained the appearance of new manners, social fights and of a whole new way of life in the cities. In Brazil that transformation started almost in the same period, but the huge impacts showed up a little bit later, in 1930, with the advent of many different necessities brought by the new urban centers, the same kind of necessities that appeared before in France.

Along the *Estrada de Ferro Araraquarense* the first kind of economy was based on cotton because of the dry solo, but in Araraquara the solo was good, and like this the coffee didn't take a long time to arrive. Through this door from the unknown territory, in a moment which NOGUEIRA referred as the start of a national principle, the State heritage was taking its place. One of the initiatives was the *March Westward* and Araraquara was a part of that. The aim of this initiative was to connect São Paulo with Mato Grosso, what in a short period of time gave place to a new idea, the cross-country road.

In France, Paris, as the capital of the country and the head of the French rail web, had, and still has, the responsibility for integrating the French territory, while its urban planning was used as referential all over the country and it was internationally recognized. In Brazil, after the emergence of the paving road the railway lost its importance and an idea came up, the "transbrasileira" (PRADO – p. 07), which was based on a road which would cross the country connecting it to other countries of South America. So while Paris kept the train connected to the urban life, in Brazilian territory transport and urban development weren't planned as parts of the same space by an interacting logic, but as a game of national and international interests.

However, the station was built in Araraquara before that idea came up, in 1885, and stayed as the final point for almost 20 years. So, like ANDRADE published in her article, the order train-urban center has its pros and cons. But the influence of this infrastructure is visible and like POPSU Europe[13] realized in Europe, the extension of the railway developed a *nouveau rôle de ces équipements, à la fois porteurs de centralité, nouvelles portes urbaines, et accueils potentiels de services tertiaires, centres d'affaires et commerces*.

After the extension of the rail line until São José do Rio Preto, inaugurated in 1912, the industrialization had a significant increase. The immigrants that went to the city already with some

[12] They wrote a collection of five books called *Histoire de la France Urbaine*, which explain the evolution of the urbanism in France since the old cities until the currently cities.
[13] Plateforme d'observation des projets et des stratégies urbaines.

knowledge started their own production what, as BARCELLONE showed in his report, gave rise to many factories and industries in the city of Araraquara.[14]

In the same period the paving road started to be used as a complement of the rails. This was the result of the influence that Brazil received from the external markets. In contrast to the European economy, the "new country" didn't have a national economy capable to hold its producers in moments of international crises (MONBEIG – p. 118-119). So the external impacts, after the Second World War, made the country face the increase of the prices to maintain the railway while the United States offered with good prices technology to improve the infrastructure and the production of cars and trucks as a faster mean of transportation.

The *Arquitetura, Urbanismo e Decoração Acrópole,* a magazine from that period published some articles about the influence that the new kind of mobility brought to the cities, and how they claimed for this "modernity". Some old newspapers collected by ROSSI[15], showed how much *Estrada de Ferro Araraquarense* tried to stay alive. It invested on some new technologies to improve its railway, but after the 50s, the railway couldn't stand the competition anymore.

The city continued to grow, but the railway is not used to transport people anymore, only to transport goods. The railway doesn't make part of Araraquara's life like it did before. The principal building of the station is well conserved and contains a museum with many photos, some technical materials, uniforms, workers' documents, things that make alive the memory of many people who worked there, but the importance of that infrastructure on the regional development is not well explored.

Part of the development of this city and of the São Paulo State is connected with this old mean of transportation. A big part of *Estrada de Ferro Araraquarense* is neglected. In Araraquara exists many places that now are like "empty spaces" in the urban grid, which contain old trains and rails instead of being reused and reintegrated in the city's life. Some industries that came after the railroad arrival are in the same state of conservation as the abandoned parts of the rail. In 2014, the city made 197 years old, and a municipal magazine called *Kappa Magazine* made a special edition about the industrialization of Araraquara since 1920 until the currently days. This was an initiative to try to revive some memories.

To improve this kind of attitude, France was got as referential, because according to an article wrote by POLINO[16] to celebrate the 20th birthday of the AHICF[17], the first inventories made

[14] BARCELLONE, Wilson Lopes. *O avanço da indústria no oeste paulista: O Ramal Ferroviário da Alta Paulista, Alta Araraquarense, Noroeste, Sorocabana* – I.C. – UNESP/2009;
[15] ROSSI, Mariana. *Saberes e representações sociais da cidade no oeste paulista: publicação de materiais impressos à beira da Ferrovia Araraquarene* – I.C. – UNESP/2009;
[16] POLINO, Marie-Noëlle, 2007;

to catalogue the railway heritage are from 1984, before UNESCO started to create lists of industrial heritage. Like SMITH[18] affirms, the French were the pioneer on the preservation of the railway history.

Thus, to increase the knowledge about the industrial development of the whole *Estrada de Ferro Araraquarense*, an analysis of one city was done. The collection of knowledge about Araraquara aims to open field for many other studies in a kind of multidisciplinary understandings, like CARON made in France before participate in the foundation of many research centers[19]. He started to contextualize railway in the economy, institutional, cultural and social fields, but later the subject was extended to a larger multidisciplinary study. So, in order to revive the value of this industrial heritage in the development of the western region of São Paulo State, the studies about the influence that the railway brought to the urbanism field will be just the beginning.

***

This master thesis will be divided in five chapters. The first one will present the historic context of the railway. It will be explained how it arrived in the country, its entrance in the State of São Paulo and its extension until the *pioneer zone* of *Estrada de Ferro Araraquarense.* After this historical reconstruction, the relationship between the economic frame of the State and the railway until its decline will be shown. This contextualization will be used in the end of the chapter to make a comparison to the French railway system, which will provide a previous idea about the development of two different kinds of railroad heritage that started in a similar way, having England as the provider of rail technology.

To continue the subject the second chapter will introduce the case of study. Thus, it will describe the region under analysis, the "Pioneer Fringes" and the most important cities for where the railway brought more progress will be presented. In sequence a more specific analysis in the case of study will be done, and to emphasize the railroad effects in the territorial expansion and in the urban grid, some French examples of railroad uses will be shown.

After put in evidence the real value of the railway system in two different countries this subject will be contextualized in the preservation frame. Its importance to the territorial and social development was recognized in a global scale, but it will be explained that France was the pioneer on the inventory of its railways and industries. So after the explanation about the industrial heritage concept, and more specific, how the railway heritage concept were inserted in the global and in the

[17] « L'Association pour l'histoire des chemins de fer em France ». This is an association that defends the preservation of heritage collecting paperwork and using different kind of associations to improve the conservation of the industrial heritage in France.
[18] SMITH, Paul, http://rhcf.revues.org/705 (2015);
[19] http://www.ahicf.com/francois-caron-1931-2014.html (2014)

national frame, it will be exposed the industrial development of the case of study. In sequence, the French inventory system will be used as a relevant action in benefit to the industrial heritage preservation.

The fourth chapter will contain the premise to build a previous catalogue of the urban and the industrial heritage to show the influence of the railway on the city's development. The datasheet will be presented as a proposal of valorization and of preservation of the industrial heritage to be used in the construction of a virtual museum. This kind of museum has some critical points that will be exposed just to give the idea that a virtual exhibition can be a good way to preserve a kind of heritage that is in constant movement.

In this way, the thesis will be finalized with a conclusion able to make a summary of everything that was discussed. It will contain how this work can contribute to the railway heritage field, some unsolved issues, the purpose of this thesis and how this analysis can improve the industrial heritage studies.

CHAPTER I. The Railway in the State of São Paulo

SUMMARY IN FRENCH

Ce chapitre présente le cadre historique de l'implantation et l'évolution de chemin de fer au Brésil, en effet il décrit comment ce transport est arrivé au pays et avec quelle manière il été installé à São Paulo et plus précisément à *Estrada de Ferro Araraquarense*, le chemin de fer qui est toujours là et qui représente un patrimoine ferroviaire marquant de l'oest Paulista.

Cette étude historique est accompagnée par une étude économique montrant le développement de l'Etat depuis l'heure que les Rails commençaient à fonctionné jusqu'au moment que ce dernier a perdu sa fonction comme moyens de transport en commun.

Suite à cela et dans ce même chapitre nous avons vu qu'il est nécessaire d'expliquer comment les autoroutes ont joué un rôle important dans le monde de transport terrestre, et avec quelle manière ils sont arrivé à remplacer le rôle de chemins de fers depuis des années au Brésil.

Une deuxième partie qui suivra la présente partie, effectuera une étude comparative entre le système ferroviaire Brésilien et le système ferroviaire Français, l'étude montrera les points en communs ainsi que les différences entre les deux exemples. On peut comprendre d'après cette analyse, les raisons pour lesquels on a choisie le cas français et non pas un autre, pour faire la comparaison et pour le considérer comme un model à suivre dans notre stratégie de sauvegarde les Rails Brésiliens.

1.1 Rails Development: From the First Railway to São Paulo's Railways

In Brazil the Railway was developed in many directions and has been funded by many different investors. This chapter will present the introduction of this infrastructure in the country, the way it crossed the State of São Paulo and its development in the region of *Alta Araraquarense*.

In October 31, 1835[20], the first law to provide rails infrastructure in Brazil was launched, it was called "Lei Feijó". It was signed by the Empire Minister, Antônio Limpo de Abreu, and the Imperial Regent, the Priest Diogo Antônio Feijó, who started his political life in 1821[21] after he had gone to Lisbon to make part of the *General and extraordinary Courts of the Portuguese Nation*. The Minister wanted some company capable to build a steel line to connect the States of Minas Gerais, Rio Grande do Sul and Bahia. To achieve his objective he gave some financing facilities, the first one was the law mentioned, which established the connection between Rio de Janeiro and the capital of Rio Grande do Sul passing through São Paulo. [22]

To implement this law, Visconde de Barbacena[23] was sent to London by the Imperial Government to form a group able to finance the railway line, because Brazil couldn't afford it by itself. So one year later, a project based on the connection of railway and waterways (Law nº 51, of March 18, 1836)[24] called *Plano de Viação* (Road Traffic Plan) was proposed, but this initiative wasn't enough to stimulate the investors. Few years later, in the 1840s[25], Tomaz Crockrane got a concession to begin the railway venture, but the British traders were so afraid of this new input that his try failed.

Finally, the first railway station was inaugurated in 1854[26], in the city of Magé, Rio de Janeiro. Thus, in the end, England didn't make investments, but its technology was used, because the British had its first rail growth spurt between 1835 and 1837[27], what made them a good referential. Like this, Irineu Evangelista de Souza, known as "Barão de Mauá", was the sponsor of this development; he made use of some facilities given by the *Imperial Companhia de Naveação a*

[20]AZEVEDO, Fernando de. *Um trem corre para o oeste* – Livraria Martins Editora S. A. – São Paulo/1950, p. 54;
[21] VIEIRA, Dilermando Ramos, *PADRE DIOGO ANTÔNIO FEIJÓ: as controvérsias de um sacerdote regalista e anticelibatário.* Published in Pistis. Prax. Magazin, Teol. Pastor., Curitiba, v. 2, n. 1, jan/jun 2010, p. 195;
[22] PINTO, Adolpho Augusto. *História da Viação Publica de São Paulo.* São Paulo/1903, p. 22;
[23] *Idem*, p. 24;
[24] *Idem*, p. 26;
[25] PREDO, Mônica Nakatani. *Formação e transformação das cidades do oeste paulista: o avanço a frente pioneira na Estrada de Ferro Noroeste* – I.C. – UNESP/2007, p. 9;
[26] YOSIOKA, Mônica Harumi. *Formação e transformação das cidades do oeste paulista: o avanço da frente pioneira do Ramal da Sorocabana* – I.C. – UNESP/2007, p. 9;
[27] VARGAS, Milton. *História da técnicas e da tecnologia no Brasil* – São Paulo – Editora da Universidade Estadual Paulista: Centro de Educação Tecnológica Paula Souza/1944, p. 134;

Vapor and *Estrada de Ferro Petrópolis* created by the government in 1852[28] to connect the Mauá Port to Petrópolis.

Barão de Mauá was a Brazilian industrialist who earned money from the development of the foundry industry; in 1846[29] he became the owner of one of them, the *Estaleiro Ponta e Areia*. His railway project was made by the British engineers: William Bragge, who went to Brazil to represent the company *Edward T. Belhouse & Co. of Manchester*[30], to implement the project of gas lighting in Rio de Janeiro; Robert Milligan and William G. Ginty, who was elected by Mauá, in 1854, to be the responsible for the gas implementation in Rio de Janeiro[31]. Ginty made plenty of engineering work in Brazil and, because of that, he received the honor of knighthood in the Brazilian Order of the Bose.

A television documentary from "Rede Globo" broadcasted in 2012 showed the difficulty found in crossing the "Serra da Estrela", a mountain of almost 870m of altitude in Rio de Janeiro. To be able to pass this natural barrier, approximately thirty years after the first locomotive got in Brazil, a technology, which was brought from Switzerland by the company *Grão Pará,* was used.

The first connection to the State of São Paulo was thru "Vale do Paraíba", a region where Minas Gerais, São Paulo and Rio de Janeiro limits meet. It was in this place where the coffee and the railway started their journey.

Image 2 – Vale do Paraíba Location. Source: http://www.explorevale.com.br/cidades/index_vale.php

The connection was made by the *Estrada de Ferro D. Pedro II*, in 1858[32]. It was financed by private capital and guided according to farmers' interests, what can be seen as a first sign of the

[28] VARGAS, Milton, p. 138;
[29] *Idem,* p. 121;
[30] http://self.gutenberg.org/articles/william_bragge (2015). Sourced from World Heritage Encyclopedia.
[31] http://www.gracesguide.co.uk/William_Gilbert_Ginty (2015)
[32] PEDRO, Mônica Nakatani, p. 10;

influence of man of power in mobility planning. The *Estrada de Ferro D. Pedro II* became a public company only in 1865[33].

> "*(...) cumpre não buscar nela plano algum de conjunto, visão alguma de longo alcance e sim nada mais que o interesse imediato dos quadros dirigentes, fazendeiro e vendedores de terras."* [34] (MONBEIG, Pierre – 1984, p. 162)

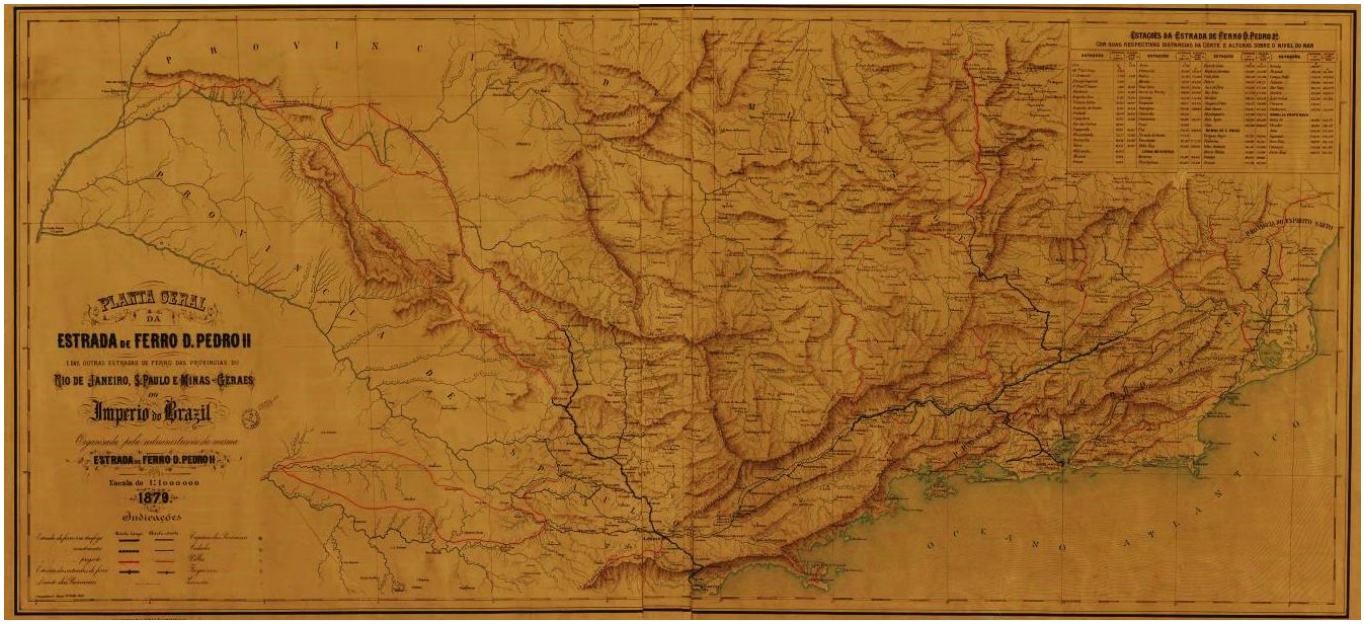


Image 3 – Estrada de Ferro D. Pedro II, connection between Rio de Janeiro, Minas Gerais and São Paulo, 1879. Source: Arquivo digital Biblioteca Nacional (Brazil).

Barão de Mauá benefited the British interests, based on the growth of the market, to attract investments to start the São Paulo Railway company. This company aimed to connect the Port of Santos, the city of São Paulo and the city of Jundiaí. This link began to be built on November 24, 1860[35]; its head office was in São Paulo, at *Estação da Luz* station inaugurated in 1867[36]. This line was made with gauge of 1,60m[37], this technical detail had a big impact on the train usage, because many companies showed up and they built rail lines with different gauges.

In the year after the station inauguration, the *Companhia Paulista de Estrada de Ferro* was founded by Saldanha Marinho, the first leader of the Republican Party[38] in Brazil, and other

[33] AZEVEDO, Fernando de, p. 66;
[34] "It doesn't complies any integrated plan, any vision of a distant future, it doesn't have anything more than the instantly interest of the managing staff, farmers and land sellers."
[35] SANTOS, Aline Silva. *Praças e jardins do oeste paulista a conformação e transformação do espaço público com a introdução da ferrovia: Ramal da Alta Araraquarense* – I.C. – UNESP/2007, p. 19;
[36] LOURENCETTI, Fernanda de Lima. *A legislação e seu processo de difusão na circulação dos preceitos higiênicos e inovações técnicas na reconfiguração das cidades ferroviárias do oeste paulista* – I.C. – UNESP/2009, p. 6;
[37] VARGAS, Milton, p. 140;
[38] MARINHO, Joaquim Saldanha. *O Rei e o Partido Liberal.* Digital Source, Typographia e Lithographia Franco-Americana/1869, p. 5;

investors like farmers and public men. The first segment was ready in 1872[39], it was the extension of the British line until Campinas, and it was designed by the British Jame Brunlees and Daniel Mackinson Fox. Both of them had won the honor of knighthood from England before that, and later they worked in the Mersey Railway in 1886[40]. After that, Brunlees continued working in South America in three different countries: Uruguay, Bolivia and Venezuela.

Their project in Brazil was supervised by the Chef Engineer of the *Companhia Paulista de Estrada de Ferro*[41], Dr. João Ernesto Viriato Medeiros, and built by Brazilians building contractors, Ângelo Thomaz do Amaral and the Architect Heitor Rademaker Grunewald[42], both of them without a biography well-known. After a while, new ramifications were done by other companies: *Ituana*, *Sorocabana* and *Mogiana*. However, for this research it is relevant to know the lines which linked the *Estrada de Ferro Araraquarense* to this whole rail network. It started in Campinas, passed through Santa Barbara do Oeste (August 27, 1875), Limeira (June 30, 1876) and Rio Claro (August 11, 1876), all of them were built by the same company, the *Companhia Paulista de Estrada de Ferro*[43].

In the 1880s, the Imperial Government started to look for a way to expand the territory usage until Mato Grosso, where today is known as Mato Grosso do Sul. The engineer Francisco Antônio Pimenta Buena was chosen to draw the project. In the meanwhile, lots of different interests related with the way that the railway needed to scroll showed up. Only in 1884 the project was planned. It was a design of the rail line leaving from Rio Claro, passing by São Carlos until Araraquara, the first city of Araraquarense rail line, where the train arrived in 1885.

Until Araraquara, the railway was built with the same gauge as usual (1,60m), but around 1873, a Brazilian engineer, Antônio Francisco de Paulo Souza, wrote the book "Estrada de Ferro na Província de São Paulo", in which he showed the problems that this kind of gauge could bring to the rails. As a resolution to these problems, he explained a new British technology, the narrow gauge, which has the dimensions between 1,00 - 1,20m. So, the Araraquarense Line adopted this new option to build its ways. That caused inconveniences, because the train made to smaller gauge couldn't run on the line with a bigger gauge, and vice-versa, like that, people and goods needed to change the train to cross the State.

[39] LANÇA, João Felipe de Almeida. *Praças e jardins do oeste paulista. A configuração e transformação do espaço público com a introdução da ferrovia: Ramal da Araraquarense* – I.C. – UNESP/2009, p. 25;
[40] http://www.gracesguide.co.uk/James_Brunlees (2015)
[41] KÜHL, Beatriz Mugayar. *Arquitetura do Ferro e Arquitetura Ferroviária em São Paulo: Reflexões sobre a sua Preservação.* São Paulo; Ateliê Editorial; FAPESP; Secretaria da Cultura/1998, p. 154;
[42] VARGAS, Milton, p. 140;
[43] LANÇA, João Felipe de Almeida, p. 26;

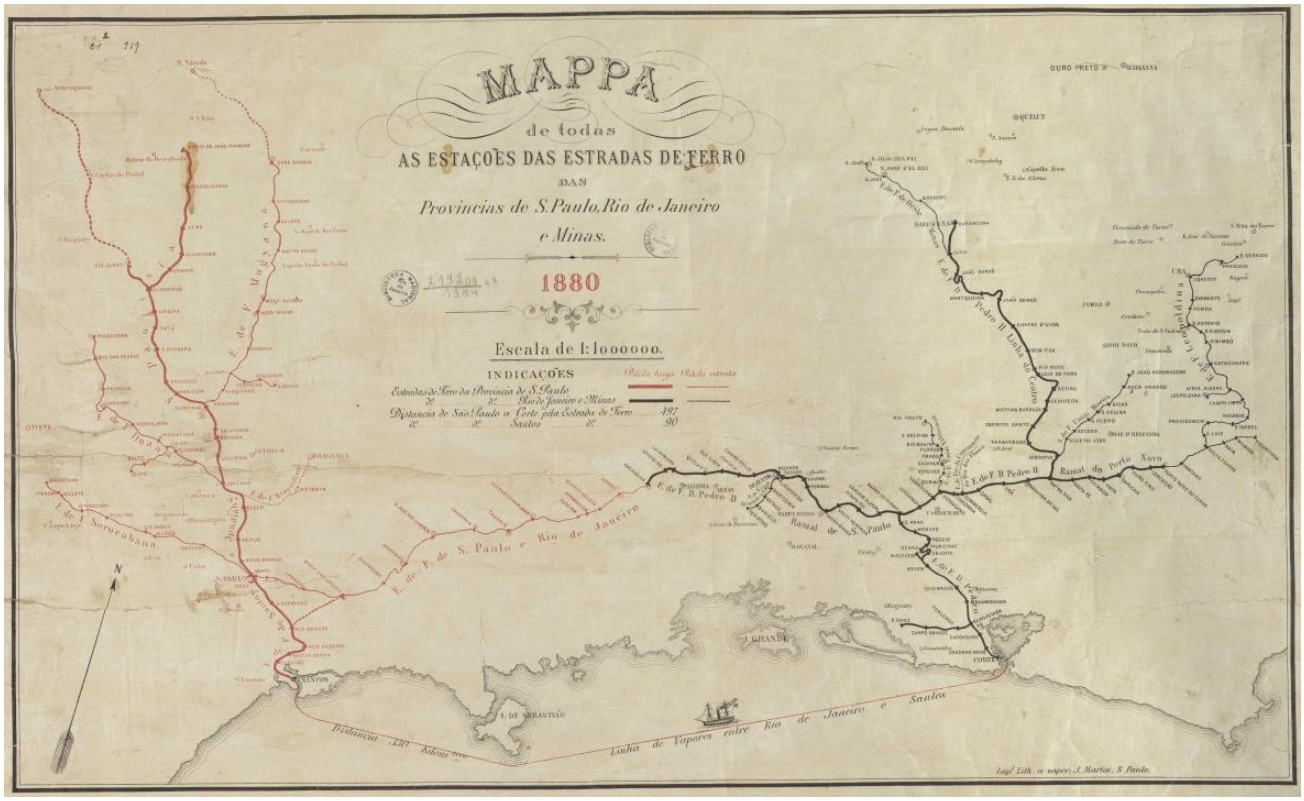


Image 4 – Railways from Rio de Janeiro, Minas Gerais and São Paulo (1880). The red one is from São Paulo. The red continue line is made by large gauge and the not continue one was built with the smaller gauge. Source: Arquivo Digital Biblioteca Nacional (Brazil).

At the same period, the transition from the Imperial Government to the Republic took place in Brazil. The coffee of the State of São Paulo represented almost 50% of the Brazilian economy, while the immigration increased a lot. This last fact had an important participation in the development of all the cities created from Araraquara until Paraná River, it brought many different economical resources besides the coffee, but this will be well explained in the next topic of this research.

Going back to the immigration, in the end of the 18th[44] century most of the new population of the State of São Paulo came from the State of Minas Gerais, because the mines started to crash, and between 1864 and 1870 The Paraguayan War made people look for refuge and new lands to start their lives without making part of the army.

[44] ZEQUIM, Carolina. *Conformação da estrutura agrária na forma do tecido urbano nas cidades do oeste paulista – Linha Araraquarense* – I.C. – UNESP/2007, P. 27;

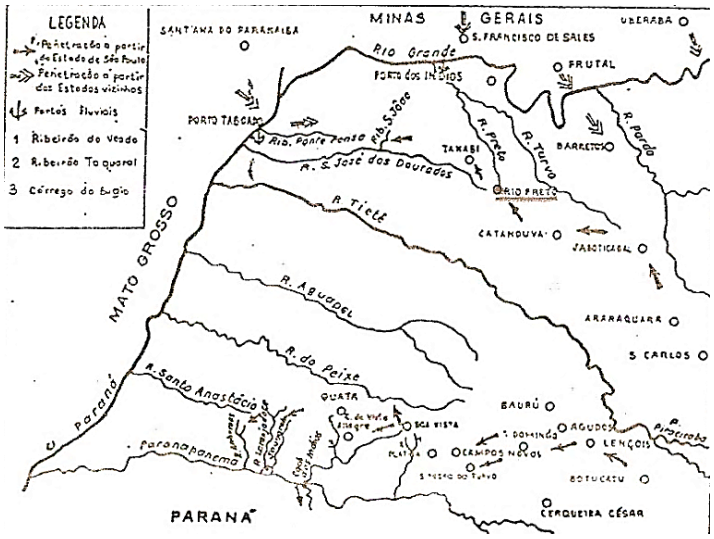


Image 5 – Map to illustrate the locomotion of the immigrants from Minas Gerais to São Paulo in the end of the 18th century. Source: MONBEIG, Pierre, 1984, p. 134.

The arrival of the steam machine resulted in the appearance of many focuses of population along the highest points between the courses of the rivers, an area considered as the best to receive the rail line. People from these new nucleuses needed to be connected to the train. So a road called "Estrada Boiadeiro" or "Estrada do Taboado" was designed by a Brazilian territory Explorer, Olavo Hummel, in 1893, with the participation of the Italian engineer Ugolino Ugoline[45]. It was funded by Cel. Carlos Castro, Capitan José Maria and the priest Ferraz[46], but the road started to be used only in 1906[47].

Estrada de Rodagem

para o

Porto do Taboado

Preciza-se de camaradas para abrir picadas no trecho até S. José do Rio Preto e de um arreeiro de tropa com ajudantes. Dirigir-se ao Hotel Petrucci.

O ENGENHEIRO—OLAVO A. HUMMEL.

Image 6 – An announce asking for help to open the way until São José do Rio Preto published by "Correio do Sertão" nº 46, April 7, 1895, p. 3. Source: ZEMQUIM, Carolina, p. 37.

Image 7 – Estrada Boiadeiro in 1910. Source: Secretaria Municipal de Cultura Presidente Epitácio, collected by the researchers of UNESP/Bauru.

[45] SANTOS, Aline, p. 22/23;
[46] ZEQUIM, Carolina, p. 27;
[47] SANTOS, Aline, p. 23;

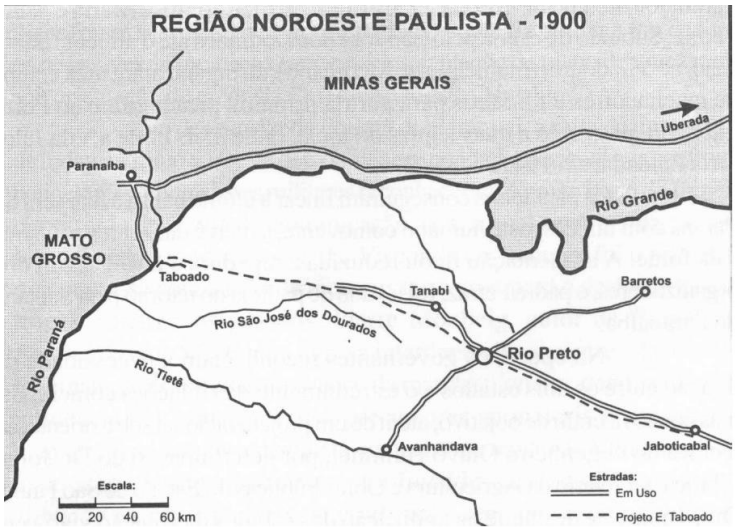


Image 8 – "Estrada do Taboado" Project, it was created to connect São Paulo city to Porto do Taboado. Source: SANTOS, Aline, 2007, p. 23.

Before the railway arrival, the main economy of this area was the cattle, only after the train got closer, the coffee started to be explored in the region. These roads, "Estrada Boiadeiro", weren't enough to the coffee transportation; they didn't receive much maintenance because of the crisis that the coffee was passing through in that moment caused by the end of its supplies, like it will be shown in the next part of this chapter.

However, Araraquarense area started to be explored before the advent of the rail line. The new infrastructure accelerated the development of this part of the State of São Paulo. The first pioneer of Alta Araraquarense was Patrício Lopes de Souza[48], one of the immigrants from Minas Gerais. He lived in many places in the country including cities from Mato Grosso do Sul. After he had gone to the State of São Paulo, him and his slave, Jeremias, went out of the region of Campinas in 1830. They had incentives from the Imperial Government to fight with the natives, the Indians who were considered as non-civilized people.

Image 9 – State of São Paulo in 1886. The green part is the unknown land. The red "X" marks the location of Araraquara. Source: Arquivo Público Digital do Estado de São Paulo.

[48] http://cidadaonet.com.br/materia/2583 (2015)

After the transition of the government, a law was created to administrate the new lands, it was called "Lei de Terras" (1850), which gave Patrício the possibility to plan some farms. In the map below the divisions of the region known as Alta Araraquarense can be seen, it begins in Tanabi and ends at the Paraná River, on the frontier of the State of São Paulo. They are twelve farms: 1 - "Fazenda Marimbondo"; 2 - "Fazenda do Ranchão"; 3 - "Fazenda Iágora"; 4 – "Fazenda São Pedro"; 5 – "Fazenda São José"; 6 – "Fazenda Voador"; 7 – "Fazenda Prata"; 8 – "Fazenda Carilho"; 9 – "Fazenda Marinheiro"; 10 – "Fazenda Pádua Dinis"; 11 – "Fazenda Água Vermelha"; 12 – "Fazenda Santa Rita".

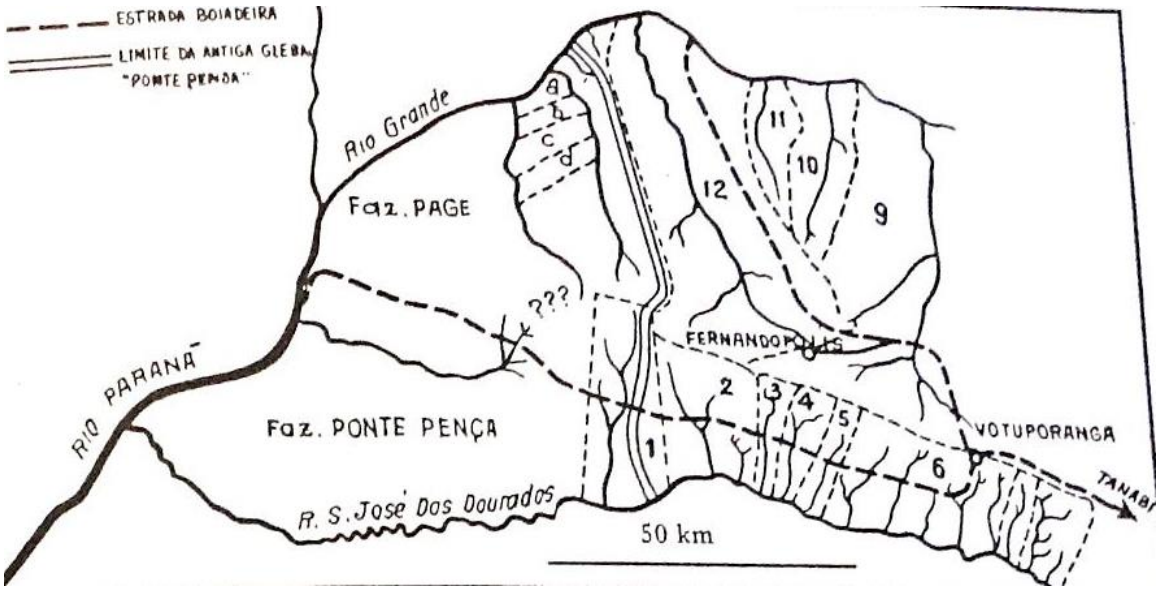
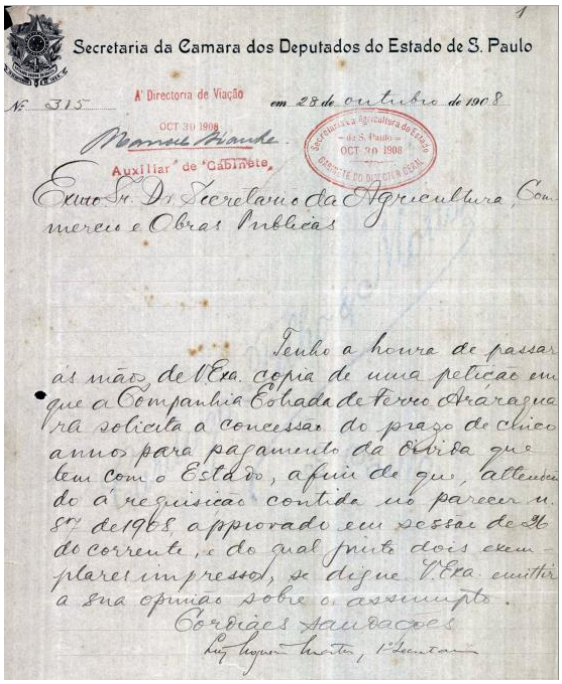


Image 10 – The farm division of Alta Araraquarense. Source: MONBEIG, Peirre/1984, p. 217.

In the 1900s, the railway started to proceed its way. The granting given to *Companhia Paulista de Estrada de Ferro*, as it was already mentioned in the beginning of this chapter, helped in the entrance of the railway in the State of São Paulo. So, the Mayer of the State, Bernardino Campos got a license in August 12, 1895[49], and the railway grew 75Km until Taquaritinga (1901)[50].

To continue its progress from this point the railway faced some difficulties caused by the lack of funding by the national banks, which were still having problems with the low stock of coffee. The railway company wanted to build the line until São José do Rio Preto, so even with some economic difficulties, the railway was extended in 1906. In 1908[51], Campos got a public authorization to continue the construction, and for that, the government gave him a period to pay the debts got by the company until that moment, caused by the bad economy.

[49] SANTOS, Aline Silva, p. 21;
[50] http://historiadaefa.net/paginas/historia/historia.htm (2013)
[51] *Idem*, p. 21;


Secretaria da Camara dos Deputados do Estado de S. Paulo

A' Directoria de Viação em 28 de outubro de 1908

Auxiliar' de 'Gabinete,

Exmo Sr. Dr. Secretario da Agricultura, Commercio e Obras Publicas

Tenho a honra de passar ás mãos de V. Exa. copia de uma petição em que a Companhia Estrada de Ferro Araraquara solicita a concessão do prazo de cinco annos para pagamento da divida que tem com o Estado, a fim de que, attendida a requisição contida no parecer n. 87 de 1908, approvado em sessão de 26 do corrente, e do qual junto dois exemplares impressos, se digne V. Exa. emittir a sua opinião sobre o assumpto.

Cordiaes saudações

Image 11 – Official Letter to the Secretary of Agriculture, Commerce and Public Works of the State of São Paulo, October 28, 1908. Source: Arquivo Público Digital do Estado de São Paulo.

So, after the railroad stopped at Fernando Prestes in 1909, the train arrived into São José do Rio Preto in 1912[52], when many roads started to be constructed to connect the railway to cities close to it. In that year, after Patrício's death, the land of Alta Araraquarense stayed without owner, consequently, Bernardino de Almeida, a realtor from Araraquara, his lawyer, João Odorico da Cunha Glória, and Mário Furquim[53] got the possession of the land. They were "grileiros", people who took advantage of lands with no legal documents to create fake ones and like that, making use of the Constitution from 1891, they could be recognized as the legitimate proprietors. The "Ministério da Fazenda do Estado de São Paulo", which faced the lands as they were used in an illegal way until that moment, and Júlio Prestes, a politician, helped them to regularize the documents and in May 19, 1914[54] they had everything officially.

João Odorico da Cunha Glória (the lawyer)	66.000 bushels
Mário Furquim	88.500 bushels
Bernardino de Almeide (realtor of Araraquara)	22.500 bushels
Júlio Prestes (politician) and Olympio Pimentel (lawyer)	21.000 bushels
Júlio Prestes (politician)	9.000 bushels
TOTAL	207.000 bushels

Table 1 – Description of the division of the land. Source: ZEQUIM, Carolina, p. 34.

[52] GIOVANI, Ana Beatriz Paro. *Formação e transformação a cidades do centro-oeste paulista: o rodoviarismo e a substituição do sistema ferroviário. Ramal Araraquarense* – I.C. – UNESP/2011, p. 5;
[53] ZEQUIM, Carolina, p. 33;
[54] *Idem*, p. 34;

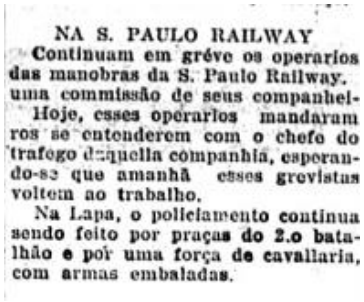
Before that, in November 6, 1912, they created an agriculture partnership, *Glória & Furquin*. In five years all the lands were already sold and the organization ended. Some of the buyers were: John Bing Paget, Guilherme Schmidt, Almeida Prado S. A. Comissária e Exportadora, Cia. Lancashire General Investment, Dr. Arando Gomes (lawyer), Dr. Euphly Jalles (engineer), Dr. Alceu de Assis, Cia. Arícola Francisco Schmidt S. A., Cecílio José Karan, *Companhia Paulista de Colonização*, Paulo Ferraz e Alcides do Amaral Mendonça.[55]

So the decline of the coffee stocks preceded a sequence of internal and external crises. During the First World War (1914), Brazil started to improve its internal market, which increased the investments in products to be consumed inside the country. Because of that, the meat became an important element of the economy, which made the region under study be considered as a big livestock farmer and it gain importance. This new economy field increased the population of Alta Araraquarense, it turned to be attractive for immigrants, as the coffee was for most of the cities of the State in the 1920s.

Thus, Brazil suffered many influences with the sequential international crises that began with the First World War and continued a little bit after the crisis of 29, as will be well analyzed in the next part of this chapter. However the impacts reached the expansion of the territory. Some of the farmers from this region and from Jaboticabal started to divide their lands in small pieces to sell them to small producers. This economy inversion, from big plantations to small ones, can be well illustrated with the history of one of the cities of Araraquarense's railway. Where today is Votuporanga, Franscisco Schimidt[56], one of the purchasers of the company *Glória & Furquin*, in 1918, had a farm called "Ribeirão Marinho", after the crisis of 1929, he got big debts with *Theodoro Wille Company*, a German company, to keep his coffee production, but in the end he needed to offer his lands to eliminate his duties.

For the railway company of Araraquara, the situation was complicated right before the First World War. In 1916, the railway was auctioned; who bought it was the *São Paulo Northern Railroad*, a North American company, with its head office in Wilmington, Delawere.[57] Nevertheless, this company wasn't interested in the rail line progress, some people say that it was a group of foreign bank clerks and they got the railway as a payment to the bank loan that they gave to build the rail until then. In 1919[58], a big strike made the government to appropriate it, and that was the moment of emergence of EFA (*Companhia de Estrada de Ferro Araraquarense*).

[55] ZEQUIM, Caroline, p. 36;
[56] *Idem*, p. 39;
[57] *Idem*, p. 42;
[58] BARCELLONE, Wilson Lopes, p. 21;



NA S. PAULO RAILWAY

Continuam em gréve os operarios das manobras da S. Paulo Railway.

uma commissão de seus companheiros se entenderem com o chefe do trafego daquella companhia, esperando-se que amanhã esses grevistas voltem ao trabalho.

Hoje, esses operarios mandaram

Na Lapa, o policiamento continua sendo feito por praças do 2.o batalhão e por uma força de cavallaria, com armas embaladas.

Image 12 – Newspaper "A Gazeta", São Paulo, p. 09, October 28, 1919, article about the strick. Source: Arquivo Público Digital do Estado de São Paulo.

It's interesting to observe that even with an economy based on the cattle, which brought a huge development; the region of Araraquarense was the second[59] coffee producer of the State. Thus, even with the internal and the external crises, this grain guided the land expansion, because of the power of their producers. It will be explained in detail that after a long pause in São José do Rio Preto, the steam machine went to the next city, Mirassol, in 1933[60] and got to the division between the State of São Paulo and Mato Grosso do Sul, in the city of Porto Vargas, in 1952[61], when it completed its 432 Km of extension.

1.2 The Links Between the Railway and the Economic Context

As can be noticed, the economic frame influenced the railway development. With a brief review on the trade and industry progress of the State of São Paulo it will be shown how this relationship happened, and how important this correlation was to the expansion of the territory. The logic of the market won't be analyzed, but a spatial, dimensional and typological survey will be done.

According to Milton Vargas, the industrialization became part of the national politics after the arrival of the Portuguese royalty in 1808, which brought some capital and interests in the creation of new factories. So, in the same way as in Europe, or in most of the world, the mining industry was the first kind of industry that appeared in the State of São Paulo. The mining production began with the *Fábrica de Ferro do São João do Ipanema*, near by the city of Sorocaba, commanded by the Swedish, Hedberg.

In the end of the 19th century, the agriculture was the main economic sector, and São Paulo was the State that had the most intensive economical-industrial development in the country. The leading product was the coffee, which entered the State through the same region as the rail, by

[59] BARCELLONE, Wilson Lopes, p. 22;

[60] According to Monbeig, the railway arrived in Mirassol in 1920, what would have caused the pioneers advance in Monte Aprazível, General Salgado and Magda direction. However, in his same book, Monbeig says that the city of Mirassol started to be the last point of the rail in 1922. Assuming information divergence, for this work was adopted the date found by Barcellone, the same date used by the City Hall of Mirassol.

[61] SANTOS, Aline Silva, p. 22;

"Vale do Paraíba", but 22 years before, in 1836[62]. This production caused a big deforestation; the woods got from them were used in the civil engineering and to feed locomotives. The area of Alta Araraquarense didn't give much of this natural resource because its forest had weaker and smaller trees, what caused the importation of wood from the city of Pereira Barretos[63], a city located below this region.

Wilson Cano presented in his thesis, "Raízes da Concentração em São Paulo"[64], that in 1870, after the advent of the railway, the State represented 16% of the coffee production in Brazil. Five years later this number had increased a quarter part of the old statistic. In 1885 it symbolized 40% and around 1900 it exceeded more than a half of the total, representing 57% of the national production. However, Vargas pointed another responsible for the State industrialization, a budget deficit. In 1844, before the fast mobility of the coffee started, the country didn't have a positive final balance, what caused a competition between national products and, consequently, improved the industries of the country.

Nevertheless, with no doubt, the coffee had a pioneer power in the industrialization. Many industries with technology to improve the production and distribution of coffee appeared. The first industrial lever was constituted by producers of: coffee processing equipment, packing equipment (sacks of jute) and manufacturing industries[65]. In the beginning, the most used machine was the "carretão"[66], initially it worked with animal's traction, and then the water power started to be used.

Around 1870, the farmers Taunay and Silva Teles brought a mechanic dryer that substituted the soil by the brick, which improved the insolation and reduced the taste of soil and the humidity of the coffee. Later the German, Ahrens, the British and Americans Mac Hardy, Samuel Beaven and Lidgerwood launched a steam machine to peel the coffee. Lidgewood dominated the cylinders market to separate the different kinds of coffee.[67]

An article published by Oxford University Press, in 2004, written by Anne Harley[68], showed that the first action related to the new economic sector was the Commercial Code from 1850. This code provided concessions and the royal support to big companies, like happened with the railways corporations before. The same article appointed the creation of the first agriculture bank in 1856 as one of the aids given by the government.

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[62] BARCELLONE, Wilson Lopes Christensen, p. 6-7;
[63] MONBEIG, Pierre. *Pioneiros e fazendeiros de São Paulo* – Editor Hucitec e Editora Polis – São Paulo/1998 p. 87;
[64] CANO, Wilson. *Raízes da concentração industrial em São Paulo*. – Doctoral Thesis – UNICAMP/1975;
[65] BARCELLONE, Wilson Lopes Christensen, p. 22-23;
[66] MONBEIG, Pierre, p. 99;
[67] *Idem*, p. 100;
[68] HANLEY, Anne. I*s it who you know? Entrepreneurs and bankers in São Paulo, Brazil, at the turn of the twentieth centery* – Enterprise & Society article, Volum 5, Number 2, June 2004, published by Oxford University Press;

Like that, in 1880, while the machines were more accessible, the industrialization started to substitute the manual labor. Wilson Cano found more factories than Lidgerwoods, Mac Hard and Arens, like *Cia. Mechanica e Importadora de São Paulo*, and an industry that belonged to Alvez Penteado (1889), which produced sacks to pack the coffee. He also mentioned some industries that didn't have connection to the coffee production, like *Cia. Melhoramentos de São Paulo* (1883), industry of paper, ceramic and lime; the *Santa Maria Antonio Prado*, factory of glass; and a cement industry, called *Rodovalho*, of the Colonel Antonio Proot Rodovalho (1897).[69]

The couple, coffee-industry, created a new social class, and they made the consuming market grow. The British law "Bill Arbedeen" influenced these changes. It prohibited the slave trade, so the working class enlarged and the coffee-industry started to pay them and to create a new urban area able to receive them. In this period the immigration increased too. Between 1837 and 1936, 863.000 immigrants came; just in 1895, 139.998[70] of them. As was already shown, those settlers were very important to the rail sector.

So since 1886, the cities started to develop, the distance between them caused the creation of new activities like small industries, banks, offices, storehouses, wholesale sector, export and import trade, and some of the cities called by Monbeig as "regional capitals" received infrastructure to support the railways (shunting areas, fuel container, platforms and sheds). This progress brought more power to the National Government and for many immigrants, who started small industries making use of the experiences that they brought from their countries and families. There were services like: funeral home, leather factory, woodworking, sawmill, factory of sweet and drinks. Some of them became huge industrial pole[71].

During the Imperial government, the agriculture of personal consumption received more encouragement, but with time they were substituted by big plantations. Throughout the Republic one, after 1890, the independence of the companies ended, which made the financing banks use the stocks created by the coffee during the Imperial period to open access to credits. But, the coffee stocks decreased in 1891[72] and the first crisis responsible for the deceleration of railways' growth, mentioned before, began. Thus, the economy got complicated; in 1896 the government implanted a containment policy, which unleashed a bank crush since 1900 until 1910[73].

[69] CANO, Wilson, p. 143;
[70] BARCELLONE, Wilson Lopes Christensen, p. 12;
[71] *Idem*, p. 23
[72] HANLEY, Anne, p. 193;
[73] CANO, Wilson, p. 16/53;

The coffee price declined in 1897[74], so the government tried to contain the production charging high taxes of the new plantations. Like that, in 1907, the coffee industry lost its position and the railway became the owner of 71%[75] of the gross industrial amount of the State of São Paulo. The price of the coffee only started to increase in 1918[76] because of many public interventions.

Besides the crisis of the coffee, the First World War reduced the importation of iron, steel and some other kind of raw materials. This situation destroyed sectors like building construction, but at the same time, it stimulated new fields like industries of scraping, steel, meal refrigeration, textile, cement and automobiles of Ford and GM. The food exportation increased too, rice, beans, corn and meat, were required in that moment of dispute. While this was happening, the production of energy enlarged, which facilitated the mechanization of the industries.[77]

With the development of the urban life the basic sanitation became an important subject. In 1892 the *Office of Water and Sewage Technical Services* was created, this initiative was followed by the emergence of the *Basic Sanitation Commission* of the State of São Paulo in 1896, under the coordination of Alfredo Lisboa. This commission aimed to drain water and sewage in the most important cities of São Paulo. Because of this action Fernando Saturnino de Brito, a Brazilian engineer, became the first specialist in basic sanitation deeds.[78]

The new necessities that were showing up caused a revision in 1918[79] of the Sanitary Code from 1824, based on French ideas, which were very well accepted by the hygienists. This review had American and German influences, which proposed the upright buildings and the urban zoning, both of them were prerequisites to all urban grids, including Araraquara.

In that moment the electrical energy started to receive lots of financial investments, normally they were made by international enterprises, because the national government didn't have financial autonomy to improve this infrastructure. Some of those companies were: *Central Elétrica de Rio Claro*, built by *Theodos Wille and Cia*, a German company, and the Parnaíba's Station, built in 1901 on Tiête River by a Canadian company, *The São Paulo Railway, Light and Power Co. Ltd*., managed by Alexandre Mackenzie and the engineer Hugh Cooper. This last enterprise financed, in 1906, the *Dam of Guarapinga* and in 1912 the *São Paulo Eletric Co*. nearby Sorocaba. Because of the huge investments on the hydropower in Brazil, a holding enterprise called *Brazilian Traction, Light and Power Co. Ltd* was created in Canada.[80]

[74] CANO, Wilson, p. 59
[75] *Idem*, p. 38;
[76] *Idem*, p. 59
[77] *Idem*, p. 159-161/179;
[78] VARGAS, Milton, p. 196;
[79] LOURENCETTI, Fernanda de Lima, p. 14/15;
[80] VARGAS, Milton, p. 198-200;

The international interests in the hydropower continued. The American F. S. Pearson created in 1914 the *Hydroelectric of Ituporanga*, which became the biggest one in Latin America. In 1921 this kind of power generation started to supply the railway company *Cia. Paulista de Estrada de Ferro*. The development of this energy in the State of São Paulo made it exceed the economy of the State of Rio de Janeiro, the main economy of the country until that period.[81]

Even with this feeling of promising enlargement, in the 20s, the United States had an economic crisis that shook the Brazilian economy[82]. One more time the coffee suffered of low prices and the government tried to control it buying the surplus. However, even in this situation the cotton production was enhanced in the country. In 1919, it was able to serve 70%[83] of the industries of São Paulo and it was in a good situation until 1926, when it had a decrease, but in 1929 it succeeded again.

So, because of the crisis the cities in Brazil tried to build new bases to their economy, the cotton was not the only product developed, the cattle and the production of oilseeds had a substantial economic participation in that period too. These new fields opened doors to the entrance of different machines and many traders from North America and England. The technological innovations improved the quality and the quantity of the national productions.

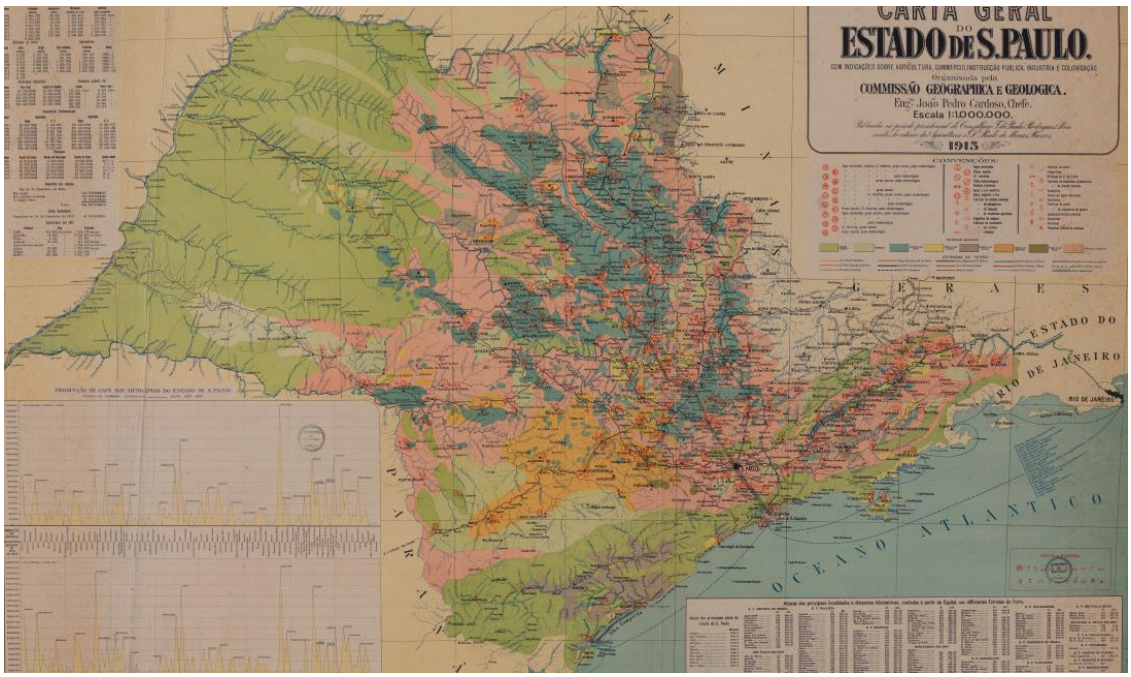

Image 13 – Map of the State of São Paulo with information about the industrialization, agriculture, trade, public infrastructure and colonization. Organized by the Geographical and Geological Commission/1915 (Chef Eng.º João Pedro Cardoso). Legend: Dark Green: virgin forest; Light Green: field; Blue: coffee; Yellow: sugar cane; Beige: rice; Orange: cotton; Brown: tabaco; Pink: many other culture. Source: Arquivo Público Digital do Estado de São Paulo.

[81] VARGAS, Milton, p. 202;
[82] CANO, Wilson, p. 29-30;
[83] *Idem*, p. 30/51;

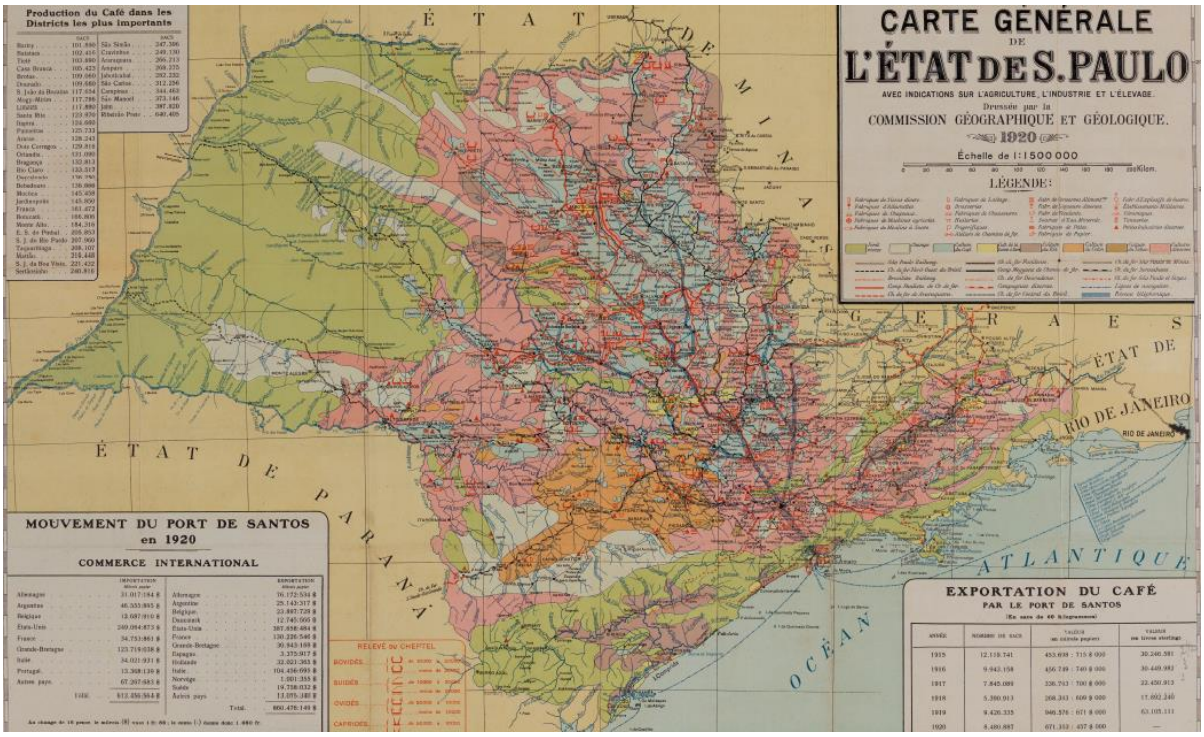

Image 14 - Map of the State oF São Paulo with information about the industrialization, agriculture, trade, public infrastructure and colonization. Organized by the Geographical and Geological Commission/1920. Legend: Dark Green: virgin forest; Light Green: field; Blue: coffee; Yellow: sugar cane; Beige: rice; Orange: cotton; Brown: tabaco; Pink: many other culture. Source: Arquivo Público Digital do Estado de São Paulo.

Consequently, new financial investments from enterprises like *Sanbra* (cotton), *Anderson Clayton* (cotton), *Francisco Matarazzo*, who had the biggest market to peel grains, *Lottus*, *Esteves Irmãos* and *Mac Fadden* helped the country to go out of the crisis in 1933[84]. In the same period the scientific studies started to aid the evolution of techniques in the use of cotton[85].

In the region under study, the cotton didn't have a consider participation in its development. Mirassol, one of the "regional capitals" according to Monbeig, changed the cultivation of coffee to cotton, but its national participation in this field was insignificant. So, to underline what was already said, between 1932 and 1935[86], it was the cattle which replaced the coffee in Alta Araraquarense. The area was characterized as "over-wintering" a region that received the cattle from many other cities to make them become fat.

Monbeig appointed the Mirassol-Fernandópolis, Monte Aprazível and General Salgado as the most important axis of this economy, because of the meal refrigerator created by Antônio Prados in the city of Barretos. During the First World War the fridge was bought by *Swift*, *Wilson*

[84] RIBEIRO, André Luiz. *O avanço da indústria no oeste paulista: o ramal ferroviário da Alta Paulista, Alta Araraquarense, Noroeste, Sorocabana* – IC – UNESP/2009, p. 21;
[85] MONBEIG, Pierre, p. 292;
[86] *Idem*, p. 56;

and Armour, a British company. In the 40s this enterprise improved the number of "over-wintering" near the city of São Paulo and at Alta Araraquarense, with a total amount of 37.000 bushel only in the cities of São José do Rio Preto, Monte Aprazível and Tanabi[87].

Thus, the industrial development of the State of São Paulo was based on sawmill, coffee, rice (because of the big Japanese immigration), and cotton machines. The first industries in Brazil didn't do serial production; they were constituted by many craftsmen[88]. So, the wholesale sector succeeded only in the 40s, when the banks started to give credits, which provided an economic balance among different products in 1945[89].

The Araraquarense's railway had influences on sawmill, because each time a new city was reached by it, the steel industry followed it. The other kind of industries didn't proceed in the same way, like the oil factory in São José do Rio Preto, which made use of cotton seeds and stayed in that city even after the extension of the rail.

The industrial progress made the government of Jucelino Kubichek, the president of the country in the 50s, creates new economic strategies. So in that period, the industries could get credits in an easier way, they had to pay low taxes to import machines and industrial equipment, among other facilities given by the "Target Plan"[90] to the tertiary sector. During this economic growth, the railway started to be seen as a slow way of mobility, which brought many debts and losses, so this same President began to support the automotive development, which turned the rail less important in the national strategies as can be seen in the next part of this chapter.

1.3 The Progress of Roadways and the End of the "Railways' Empire"

> *"In passenger transport, private car dominate the modal shares in developed countries, while rail and bus are relatively more important in developing countries"*[91]

The mobility is an important element to countries' development. As could be seen, to study this component out of its general context is very hard. Thus, now the progress of the mobility, the transition between the use of the trains to the use of cars and trucks, and how Brazil missed an intermodal strategy, an important development plan, which can be seen in European countries like France, will be presented.

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[87] MONBEIG, Pierre, p. 313;
[88] *Idem*, p. 360-365;
[89] *Idem*, p. 271;
[90] www.vidadeindustria.com.br (2014) – CNI (National Industry Confederation)/2008;
[91] SILVA, Miguel Sena. *Demand-side driving forces influencing the EU transport industry's competiveness.* Article published in Newsletter – RACE2050, October/2013, p. 02;

The first review made on the national mobility after the Proclamation of the Republic, in 1889, occurred in 1891[92], when the *Ministry of Industry, Transport and Public Construction* was created. This new administration included in its plan the management of roads, after they became a necessity to connect cities located far from the railway, like the road already mentioned before, called "Estrada Boiadeiro", created in the region of Araraquara. To organize this new responsibility, in 1896, the first *General Plan of Highways of São Paulo* was created, which divided the roads into three kinds[93]:

- Roads responsible to integrate new regions;
- Roads responsible to link cities to railways;
- Roads used to branch the principal routes.

Nevertheless, according to Milton Vargas, during the Imperial Government, German engineers managed the construction of a road from Santos, where the most important port was, to the capital of the state, the city of São Paulo. Quite apart from this, the intense use of the roads started around 1910, and to connect cities until the railway was the main purpose.

The first cars came to Brazil as a sport element. About 1908[94], car clubs were created and the first car passed on the "Estrada da Maioridade", frequently called "Estrada Vergueiro". These clubs were the sign that one more time the mobility was in the hands of rich people. The *Car Club Pauslista*[95], created around 1910 by Washintong Luís Pereira de Sousa, developed this mean of transportation in the country because in each event organized by it, a new road was created, so all of them followed the elite interests.

Until that moment, even guided by the elite's interests, in general, the roads were projected to establish connections with the rail line. To amplify the intermodal strategy, in 1913[96], the engineer Clodomiro Pereira da Silva, who wrote the book *O problema da viação no Brasil* (The problem of the transportation in Brazil) published in 1910, created the first plan "Plano de Viação" (State Road Plan), which raised the first modern road in the country in 1916[97]. This highway connected the city of São Paulo to the city of Campinas, and currently it is part of the highway "Via Anhanguera".

[92] http://www.transportes.gov.br/conteudo/60924 (2013);
[93] HILDEBRAND, Marília Campos. *Formação e transformação das cidades do centro-oeste paulista: o rodoviarismo e a substituição do sistema ferroviário. Ramal Noroeste* – I.C. – UNESP/2011, p. 07;
[94] VARGAS, Milton, p. 203-204;
[95] RODRIGUES, Dâmares Oliveira Barbosa. *Formação e transformação das cidades do centro-oeste paulista: o rodoviarismo e a substituição do sistema ferroviário. Ramal Sorocabana* – I.C. – UNESP/2011, p. 04;
[96] HILDEBRAND, Marília Campos, p. 05;
[97] GIOVANI, Ana Beatriz Paro, p. 06;

A year later the Association *Associação Paulista de Estrada de Rodagem* was approved and the first congress about São Paulo's roads, "1º Congresso Paulista de Estrada de Rodagem"[98], was conducted. Both actions helped in the diffusion of the automobile in the most important cities of the state. The congress changed the first idea to characterize the roads and establish two new concepts[99] to replace the three made before:

- Agriculture road: connections with the railway built by taxes charged from its users by the municipality;
- Long course: roads made to attend private interests, who used to finance them.

A second congress was conducted in 1919[100], the same year of the installation of a *Ford Motor Company* subsidiary in Brazil. At this time the event prioritized the roads more than the railways. One year later, the founder of the car club, Washington Luiz, became the president of the State of São Paulo. During his mandate, plans for roads development in the state were being developed in federal level, which resulted in the formation of a *Road Inspectorate* in 1921[101], and the construction of roads in the same directions of the railway started to be planned.

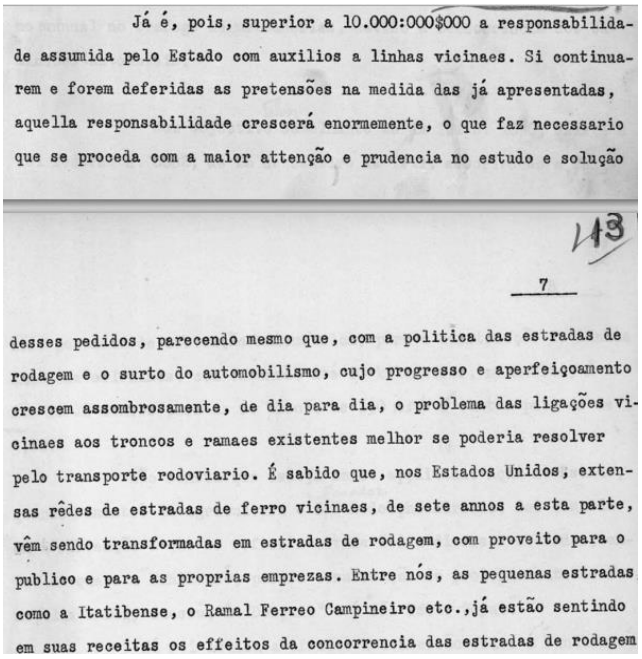
In 1923[102] another congress took place, which presented a research in which São José do Rio Preto, one of the principal cities of the region of Araraquara, appointed the car as the main responsible of the development of the new urban centers and of the city of Mirassol. Two years later[103] the first truck got to Tanabi, a city located after the city of Mirassol, to transport goods to the train station of Rio Preto, which until that moment was the last stop of the rail. Thus, the Araraquarense's region was already developing before the progress of the train.

It's interesting to observe that the road was used as an element to warm up the competitions between the railways. Araçatuba and São José do Rio Preto used the highways as a strategy to dominate the distribution of production from Monte Aprazível. They opened roads in the west and southwest of this city, and in the end, Araçatuba got the most part of the products, because its way was faster, and like that the train station of Rio Preto lost the opportunity to increase its profits.[104]

Between 1920 and 1924[105], while the country was creating new economics resources beside the coffee, 1.500Km of roads were built. In 1925[106], the State of São Paulo was the pioneer in

[98] RODRIGUES, Dâmares Oliveira Barbosa, p. 04;
[99] GIOVANI, Ana Beatriz Paro, p. 06;
[100] *Idem*, p. 06;
[101] PRADO, Nathalie do. *Formação e transformação das cidades do centro-oeste paulista: o rooviarismo e a substituição do sistema ferroviário. Ramal Noroeste* – I.C. – UNESP/2011, p. 07;
[102] RODRIGUES, Dâmares Oliveira Barbosa, p. 04
[103] MONBEIG, Pierre, p. 200;
[104] *Idem*, p. 199;
[105] VARGAS, Milton, p. 205;

South America in the application of concrete in paving. A report from September 24, 1926, made by the Director of the Roads, expressed a little how the railways were in that moment. He considered unfeasible to give new concessions to build branch rail lines, because of the progress of the roads and the competition between the two means of transportation.



Já é, pois, superior a 10.000:000$000 a responsabilidade assumida pelo Estado com auxilios a linhas vicinaes. Si continuarem e forem deferidas as pretensões na medida das já apresentadas, aquella responsabilidade crescerá enormemente, o que faz necessario que se proceda com a maior attenção e prudencia no estudo e solução

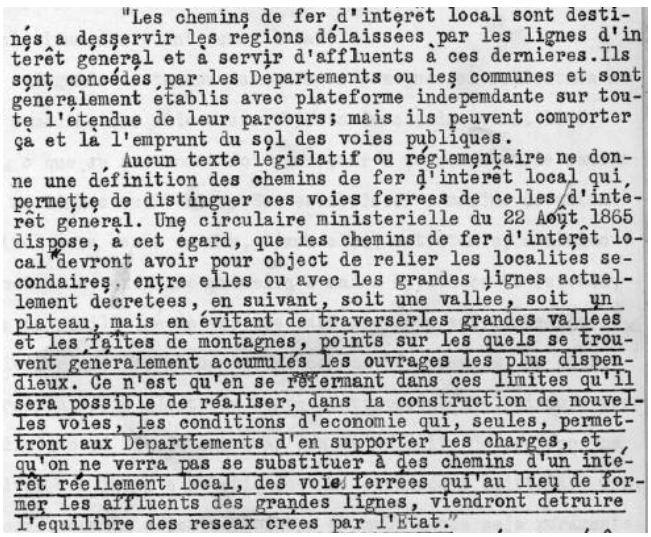
113

7

desses pedidos, parecendo mesmo que, com a politica das estradas de rodagem e o surto do automobilismo, cujo progresso e aperfeiçoamento crescem assombrosamente, de dia para dia, o problema das ligações vicinaes aos troncos e ramaes existentes melhor se poderia resolver pelo transporte rodoviario. É sabido que, nos Estados Unidos, extensas rêdes de estradas de ferro vicinaes, de sete annos a esta parte, vêm sendo transformadas em estradas de rodagem, com proveito para o publico e para as proprias emprezas. Entre nós, as pequenas estradas como a Itatibense, o Ramal Ferreo Campineiro etc.,já estão sentindo em suas receitas os effeitos da concorrencia das estradas de rodagem

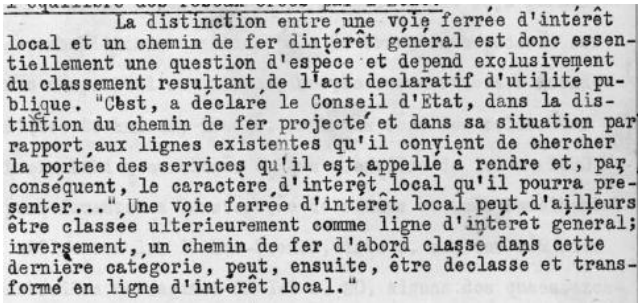
Image 15 – Secretary of Transports and Public Construction. Report from the Director, it is a part about the competition between the railway and the roads, São Paulo, September 24, 1926. Source: Arquivo Público Digital do Estado de São Paulo.

In this same report the Director used a French document wrote by Réné Tévenez titled as "Legislation des Chemins de Fer et des Traways", from 1909. In the passage quoted, it can be seen that the first branch rail line in France was built in 1858; they described it as a road of local interests. Its main objective was to supply regional needs without having an intense commercial use, which was different from the principal lines called lines of general interests. The one who built the local lines was the municipal departments without any kind of national concession, the point which the Director from Brazil wanted to defend.



"Les chemins de fer d'interêt local sont destinés a desservir les regions délaissees par les lignes d'interêt general et à servir d'affluents à ces dernieres. Ils sont concédes par les Departements ou les communes et sont generalement établis avec plateforme indepemdante sur toute l'étendue de leur parcours; mais ils peuvent comporter ça et là l'emprunt du sol des voies publiques.

Aucun texte legislatif ou réglementaire ne donne une définition des chemins de fer d'interêt local qui permette de distinguer ces voies ferrees de celles d'interêt general. Une circulaire ministerielle du 22 Août 1865 dispose, à cet égard, que les chemins de fer d'interêt local devront avoir pour object de relier les localites secondaires entre elles ou avec les grandes lignes actuellement decretees, en suivant, soit une vallee, soit un plateau, mais en évitant de traverserles grandes vallees et les faîtes de montagnes, points sur les quels se trouvent generalement accumulés les ouvrages les plus dispendieux. Ce n'est qu'en se réfermant dans ces limites qu'il sera possible de réaliser, dans la construction de nouvelles voies, les conditions d'economie qui, seules, permettront aux Departtements d'en supporter les charges, et qu'on ne verra pas se substituer à des chemins d'un interêt réellement local, des voie ferrees qui'au lieu de former les affluents des grandes lignes, viendront detruire l'equilibre des reseax crees par l'Etat."



La distinction entre une voie ferrée d'interêt local et un chemin de fer dinterêt general est donc essentiellement une question d'espece et depend exclusivement du classement resultant de l'act declaratif d'utilite publique. "Cest, a declare le Conseil d'Etat, dans la distinction du chemin de fer projecté et dans sa situation par rapport aux lignes existentes qu'il convient de chercher la portee des services qu'il est appelle à rendre et, par conséquent, le caractère d'interêt local qu'il pourra presenter..." Une voie ferree d'interêt local peut d'ailleurs être classee ulterieurement comme ligne d'interêt general; inversement, un chemin de fer d'abord classe dans cette dernière categorie, peut, ensuite, être declasse et transformé en ligne d'interêt local."

Image 16 - Secretary of Transports and Public Construction. Report from the Director, it is the part about the "Legistation des Chemins de Fer et des Traways". São Paulo, September 24, 1926. Source: Arquivo Público Digital do Estado de São Paulo.

[106] VARGAS, Milton, p. 205;

As such, after 1926[107] the car stopped to be used only as a sport tool and became part of the daily life. In 1929[108], some people made up the concept of a "transbrasileira", a road able to connect the Americas passing through the largest number of cities as possible, to enhance the properties. Well, this was the moment of the coffee crisis, which was increased after the USA restructured Europe[109]. The old continent started to develop an internal market, what forced Brazil to do the same, like was already described. So, the country needed a modal with rapid infrastructure to be built, and the unique solution found was the road. Like that, the new infrastructure contributed to transform the city in a new commercial center.

As a way to unify the national market, the technology to develop the roads was obtained from the United States, after the Second World War, with low prices. The cities could grow faster, the industries started to move to the State's hinterland, which improved some urban centers, while the railway got annual deficits.

Along this frame, the transport plans were rebuilt many times[110]:

- 1934: creation of the *Department of Highways*, which gave autonomy to the roads on the capital invested on them;
- 1936: Álvaro de Souza Lima made a *Transport Plan* with population-based studies to create roads in a transverse direction;
- 1937: created the *Plan of the National Department of Highways*;
- 1941: to try to improve the railway was created the *National Department of Railways*;
- 1945: "Lei JOPPERT", organized the National Road Fund, what consolidated the financial autonomy of the highways through taxes on imported liquid fuels and lubricants. This strengthened the competition with the rail line.

However, even with all these initiatives, the roads weren't able to be well planned. A magazine called *Arquitetura, Urbanismo e Decoração Acrópole*[111], published in September of 1939, that the cities were being built by landowners with the supervision of people without sufficient knowledge. The Intercity Roads caused the loss of products and the marginalization of the rural area, caused by the hard way between them and the city, which precluded people to have access to schooling, because this kind of service was provided only in the cities. Another kind of problem was the absence of cars' registers; that enabled the creation of a good plan, and to make things worse, the different States of the country were unaware of each other.

[107] VARGAS, Milton, p. 206;
[108] PRADO, Nathalie do, p. 06/08;
[109] BARCELLONE, Wilson Lopes Christensen, p. 24;
[110] GIOVANI, Ana Beatriz Paro, p. 07;
[111] http://www.acropole.fau.usp.br/ (2014);

This disorder didn't stop the automobile market. In 1939 two new enterprises went to Brazil, *Goodyar* and *Firestone*, producers of tires, and a year later *Arno*, an engine producer, which in the future started to produce parts of household appliances, went there too. The country had a *National Factory of Engine*, which made the first national vehicle in 1943. To illustrate this progress even more, in 1956, the *Mercedes-Bens* company made the L-312 truck, the first vehicle with diesel engine, in the same year of the creation of *Romi-Iseta*, the first car made to take more people, which had 70% of its pieces made in Brazil. The real first national car was *Fusca*, made by *Ford*, an automobile manufacturer which came in 1958, in the same year of the arrival of *Volksvagem*.[112]

In this way, more investments were done to build infrastructure to the use of car. In the 40s the highways "Via Ancheta" and "Via Anhanguera" were constructed. The first one was made to connect the biggest port of Latin America, the port of Santos, to the city of São Paulo. The intention wasn't only to transport goods, but the port was seen as the entrance of the tourism, so the new paving way was an investment to improve this kind of economy too. To build this road, it was necessary canalizing the Tietê River, so a dredger of suction and discharge with a pipe of 18 inches was brought from the USA. The construction was achieved by a financial controller "Adhemar de Barros". [113]

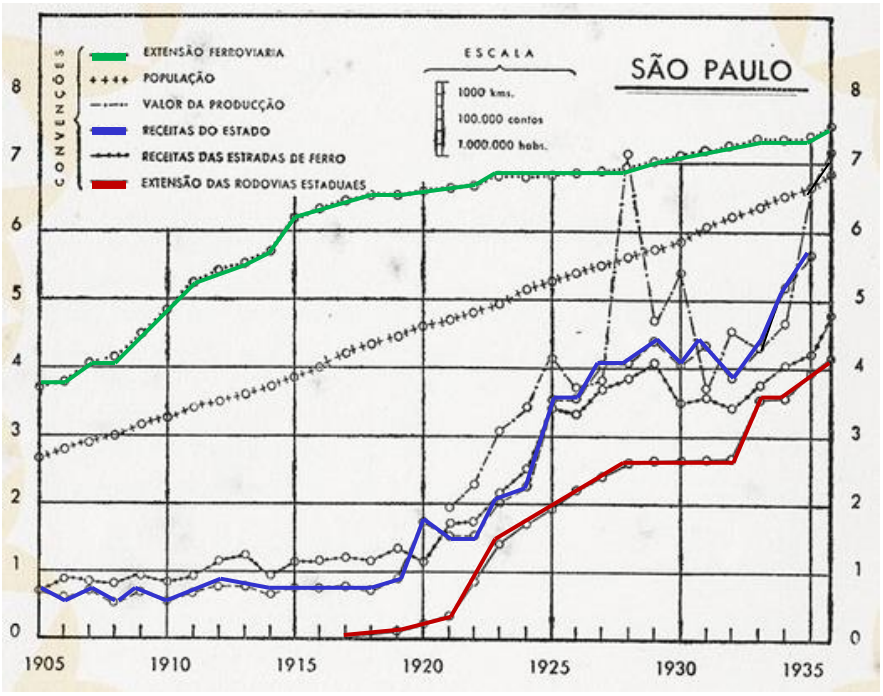


Image 17 – Comparison chart: Railway, Roadway and State Revenue. Adjustment: LOURENCETTI, Fernanda de Lima. Source: http://www.acropole.fau.usp.br/edicao/14/40 (2014)

During the development of infrastructure and technology of the automobile, the railways suffered abandonment and neglect. The graph above can show how the economy grew fast with the

[112] www.vidadeindustria.com.br (2014) – CNI (National Industry Confederation)/2008;
[113] http://www.acropole.fau.usp.br/ (2014) - Revista "Arquitetura, Urbanismo e Decoração Acrópole", Ano III, nº 34 – Editora: Edições Técnicas Brasileiras LTDA. – São Paulo/Fevereiro de 1941;

insertion of the new vehicles. Even with some initiatives of modernization of the railway, more intensive between 1922 and 1940[114], using new wagons and electrified locomotives, it can be seen that the roads promoted the development of the economy of the State. While the railway-earning-power was almost a constant line, the roads maintained that line growing and the national-earning-power almost followed the rhythm of the roads.

In the region of *Alta Araraquarense*, the creation of highways as complements of the railway, and the advent of the transverse routes caused a convention of associations of trade around the whole region. According to the newspaper *Oeste Paulista*[115], this initiative aimed to improve the cities with roads and electric lighting.


nvenção das Associações merciais da Região Géo-nomica da Araraquarense

Presidiram os trabalhos desse conclave, os senhores, Dr. Decio Ferraz Novais e o Dr. Basilio Machado Neto, presidentes, da Associação Comercial de S. Paulo e da Federação das Associações Comerciais do Estado de S. Paulo, respectivamente. Dentre os problemas estudados nessa reunião, destacou-se o da melhor seleção das sementes do algodão a serem fornecidas aos lavradores, para que estes possam ter melhor rendimentos na sua produção; também fora tratado sobre o financiamento aos lavradores em condições mais razoaveis, assistencia sanita'ria, construção de rodovias para melhor escoamento das safras e ligação entre os diversos municipios, et.

A Associação Comercial, Industrial e Agro-Pecuaria de Votuporanga, fez-se representar nessa convenção, pelos senhores, Joaquim Ferreira da Costa, Egas Munis de Oliveira e Dr. Wilson Souza Foz. A comissão representativa de nossa cidade teve a oportunidade de lembrar que um dos problemas deste municipio, a ser resolvido com a maior brevidade possivel, e' o da Energia Ele'trica, pelo que se conseguiu fosse aprovado um pedido a ser dirigido ao Governo do Estado, a-fim-de que sejam tomadas as providencias necessa'rias junto a' Companhia Paulista de Eletricidade. Particularmente, o snr. Presidente da Associação Comercial de São Paulo, prometeu trabalhar junto a's autoridades competentes para que Votuporanga consiga a tão desejada e necessa'ria em todos os setores da vida humana: A ENERGIA ELE-TRICA.

Prestigiando o teu jornal, estarás contribuindo para a grandeza de tua terra.

Image 18 – "Oeste Paulista" Newspaper. Convenção das Associações Comerciais da Região Géo-Economica da Araraquarense – 1947. Source: ROSSI, Mariana, 2009, p.54.

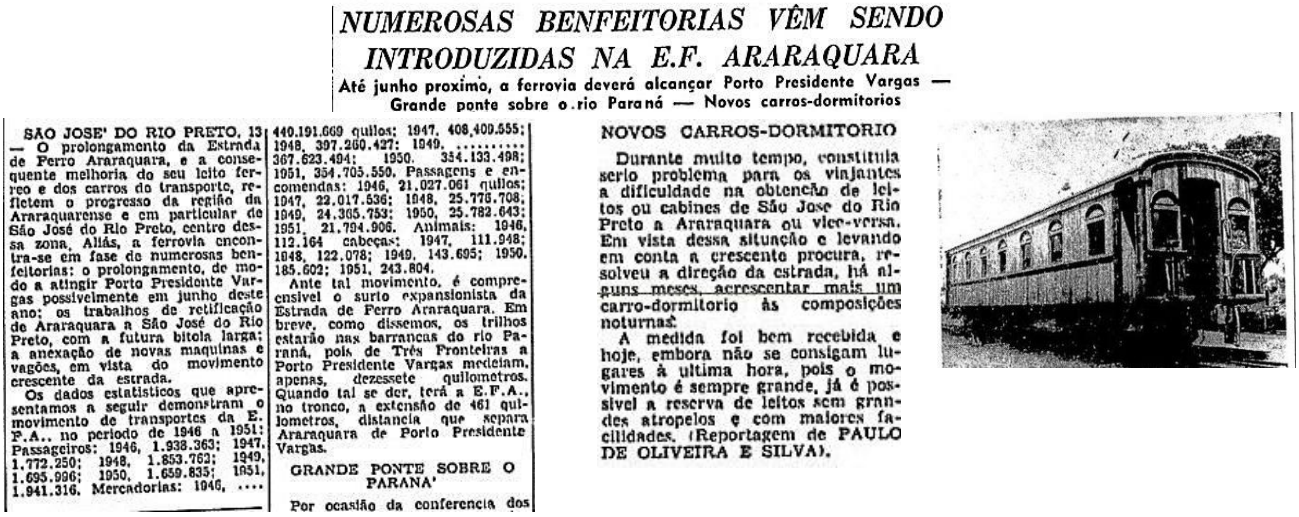
In the national level, the national bank, *Banco Nacional de Desenvolvimento Econômico*, and *Petrobrás*, the biggest national oil company until our days, were created in 1952[116] and 1953[117] respectively. Both of them made a part of the first multi-sector plan initiative called *SALTE* (Health, Food, Transport and Energy). Jucelino Kubitschek, the president of the country in the 50s[118], had as slogan the phrase "fifty years in five", so all these changes made part of this aim. But his philosophy put the railway as an bottleneck to progress, and many plans, like the *Plano de Reaparelhamento Econômico* and the *Plano de Metas* were made up to install roads.

The law number 2.689 of December 27, 1955[119], was created to deactivate some rail lines, and like that the rails started to be used only to transport goods, always developing through short-term interests. The importance given to the roads was so significant that in 1956, the assemblyman

[114] GORNI, Antonio Augusto. *Eletrificação nas Ferrovias Brasileiras.* – www.gorni.eng.br/Gorni_ElectroBras_2003.pdf (2015)
[115] ROSSI, Mariana, P. 54;
[116] http://cpdoc.fgv.br/producao/dossies/AEraVargas2/artigos/EleVoltou/BNDE (2015)
[117] http://memoria.petrobras.com.br/acervo/criaao-da-petrobras#.VVoHzvlViko (2015)
[118] RODRIGUESS, Dâmaris Oliveira Barbosa, p. 06;
[119] GIOVANI, Ana Beatriz Paro, p. 07/08

Clóvis Pestana added a new discipline in the Federal Universities of Engineering called *Estradas de Rodagem* (Highways).[120]

Nevertheless, the line of *Araraquarense* continued to grow, and new wagons were bought. In 1952[121], during the governmental period of Lucas Nogueira Gardez, and later during the governmental period of Janio Quadros, the rails with gauges of 1,00m were changed to the largest one, with 1,60m, to receive new wagons with diesel engines, in 1958[122]. Like that the transport was faster, because the goods didn't need to change the train to continue their trip.



NUMEROSAS BENFEITORIAS VÊM SENDO INTRODUZIDAS NA E.F. ARARAQUARA

Até junho proximo, a ferrovia deverá alcançar Porto Presidente Vargas — Grande ponte sobre o rio Paraná — Novos carros-dormitorios

SÃO JOSE' DO RIO PRETO, 13 — O prolongamento da Estrada de Ferro Araraquara, e a consequente melhoria do seu leito ferreo e dos carros do transporte, refletem o progresso da região da Araraquarense e em particular de São José do Rio Preto, centro dessa zona. Aliás, a ferrovia encontra-se em fase de numerosas benfeitorias: o prolongamento, de modo a atingir Porto Presidente Vargas possivelmente em junho deste ano; os trabalhos de retificação de Araraquara a São José do Rio Preto, com a futura bitola larga; a anexação de novas maquinas e vagões, em vista do movimento crescente da estrada.

Os dados estatisticos que apresentamos a seguir demonstram o movimento de transportes da E. F.A., no periodo de 1946 a 1951: Passageiros: 1946, 1.938.363; 1947, 1.772.250; 1948, 1.853.762; 1949, 1.695.996; 1950, 1.659.835; 1951, 1.941.316. Mercadorias: 1946, ... 440.191.669 quilos; 1947, 408.409.555; 1948, 397.260.427; 1949, ... 367.623.494; 1950, 354.133.498; 1951, 354.705.550. Passagens e encomendas: 1946, 21.027.061 quilos; 1947, 22.017.536; 1948, 25.776.708; 1949, 24.365.753; 1950, 25.782.643; 1951, 21.794.906. Animais: 1946, 112.164 cabeças; 1947, 111.948; 1948, 122.078; 1949, 143.695; 1950, 185.602; 1951, 243.804.

Ante tal movimento, é compreensivel o surto expansionista da Estrada de Ferro Araraquara. Em breve, como dissemos, os trilhos estarão nas barrancas do rio Paraná, pois de Três Fronteiras a Porto Presidente Vargas medeiam, apenas, dezessete quilometros. Quando tal se der, terá a E.F.A., no tronco, a extensão de 461 quilometros, distancia que separa Araraquara de Porto Presidente Vargas.

GRANDE PONTE SOBRE O PARANA'

Por ocasião da conferencia dos

NOVOS CARROS-DORMITORIO

Durante muito tempo, constituiu serio problema para os viajantes a dificuldade na obtenção de leitos ou cabines de São Jose do Rio Preto a Araraquara ou vice-versa. Em vista dessa situação e levando em conta a crescente procura, resolveu a direção da estrada, há alguns meses, acrescentar mais um carro-dormitorio às composições noturnas.

A medida foi bem recebida e hoje, embora não se consigam lugares à ultima hora, pois o movimento é sempre grande, já é possivel a reserva de leitos sem grandes atropelos e com maiores facilidades. (Reportagem de PAULO DE OLIVEIRA E SILVA).

Image 19 – Fragments of the Article *Numerous Improvements Have Been Introduced in E. F. Araraquara* about the extension of the Araraquarense's Line and the arrival of new wagons-dormitories. Sources: https://www.facebook.co/estacoeferroviarias/photos (2014)

Têrça-feira Inauguração da Bitola Larga

Idêntico o tempo de percurso - Novo horário - Amanhã não circularão trens

Finalmente na próxima têrça-feira a EFA fará inaugurar seu último trecho de bitola larga, ficando sua linha tronco inteiramente servida pela bitola de 1,60 mt.

Todavia, o novo horário em quase nada diminuiu o tempo de percurso. Antes uma viagem de Santa Fé do Sul a Rio Preto demorava 25 minutos mais que a atual, isso porque houve a supressão de baldeação descômoda de Votuporanga.

publicamos o novo horário, que entrará em vigôr na próxima têrça-feira:

O primeiro trem, sai de Santa Fé às 6,48, passará por Jales às 8,17 hrs, por Fernandopolis ás 9,18, por Votuporanga às 10,27 e chegará em Rio Prêto ás 12,30 e em Ararapuara às 16,31 e daí sem baldeação, para São Paulo, onde chegará às 22,44hs.

O segundo trem, sai de Santa Fé às 14,34 passará por Jales as 16.6 hs, por Fernandopolis às 17,08 hs., por Votuporanga às 18,20. O ultimo trem, sairá ás 17,03 hs., passará por Jales as 18,38 por Fernandopolis ás 19, 53 por Votuporanga as 21,14 (de onde terá carro dormitório até Araraquara). em Rio Prêto ás 0,02 hs., chegando a Araraquara ás 5,50 hs., em Rio Prêto ás 0,02 hs., chegando a Araraquara ás 5,50 hs., onde faz baldeação para São Paulo, lá chegando ás 11,02.

VOLTA

O primeiro trem, sai de São Paulo às 22,30, chega em Araraquara São Paulo as 5,25 hs., chega em Araraquara ás 11,30 hs., e segue baldeação segue para Rio Prêto, onde chega ás 15,27, e de lá para Votuporanga (17,32) Fernandopolis (18,43) Jales (19,48) chegando em Santa Fé as 21,07 hs. O ultimo trem, sai de S. Paulo as 18,30 hrs. faz baldeação em Araraquara as 23,15 hs, passa por Rio Prêto as 5,02hs, por Votuporanga as 7,51 hs, por Fernandopolis 9,11 hs., por Jales, 10.21 e chega em Santa Fé do Sul às 12,15 horas.

Como podem

Image 20 - "A Tribuna D'Oeste" Newspaper. *Inauguration of the large gauge* - Article, March 20, 1960. Source: ROSSI, Mariana/2009, p. 81.

[120] GIOVANI, Ana Beatriz Paro, p. 09;
[121] http://vfco.brazilia.jor.br/diesel/gp9L18/CO-22-locomotivas-GP9L-GP18.shtml (2014)
[122] *Idem*; (2014)

Governador Inaugura Oficialmente Trecho Final

O PENSAMENTO DO JORNAL

...E a Comarca?

escreve - ALCIDES SILVA

Acentuadas vêzes temos debatido p o r estas colunas um dos problemas q u e mais transtôrno tem trazido à população local, com prejuizo evidentes a todos: o da instalação da comarca, já criada pela quase decadente lei de 31 de dezembro de 1953.

Não mais se justifica o retardamento da medida, principalmente agora que o famigerado ante-projeto da reforma judiciária despertou do letargo sono que a prendia as egrégias gavetas do Tribunal de Justiça.

Sendo uma iniciativa eminentemente, técnica sôbre a qual já se manifestaram demoradamente os respeitáveis desembargadores estaduais, era de se esperar que mal chegasse ao Palácio dos Campos Elísios, o anteprojeto fôsse incontinente enviado á Assembléia Legislativa para imediata aprovação. Todavia, porém, da mesma forma continua a tal medida, stodorramente permanece nos escaninhos do palácio governamental.

É sabido que a justiça em Jales caminhas tartarugamente. Não por culpa dos cartórios, do juiz, do promotor, ou dos advogados. Nem tampouco por culpa das parte. Mas exclusivamente, pelo acúmulo de processos que costumeiramente obriga a realização de até dez audiências diárias. É pior que a injustiça, é a justiça tardia.

Algumas medidas urgentes devem ser tomadas. É necessário, de imediato, q u e uma comissão representativa da cidade seja formada e junto ao Governador do Estado mostre o descalabro da situação atual. E preci-

Primeira viagem entre Votuporanga e Fernandópolis - Importância economica para a região - Prefeito p e d e aplicação d a reforma agrária em duas fazendas

O Governador Carvalho Pinto, acompanhado de comitiva viajou quinta feira a Votuporanga, a fim de inaugurar o ultimo trecho de bitola larga da Estrada de Ferro Araraquara ligando aquela cidade a Presidente Vargas, num trecho de 30 km. completando a tarefa de alargamento de (432 km) iniciado no governo prf. ucas Nogueira Garcez e continuado pelo sr. Janio Quadros.

VOTUPORANGA

O governador, acompanhado de sua esposa d Yolanda Carvalho Pinto, e de numerosa comitiva desembarcou em Votuporanga por volta das 1ó horas. Aguardavam o governador autoridades da região, os prefeitos de Urupês, Tabapuã, Mirassol, Jales, Tanabi, Jaboticabal, Fernandópolis, Araraquara, Votuporanga, Catanduva e São José do Rio Preto.

PEDIDA DESAPROPRIAÇÃO DE DUAS FAZENDAS

Logo e n seguida na Associação Comercial local, o governador foi homenaheado, entregando se a sua esposa, d. Yolanda Carvalho Pinto, um broche de ouro e brilhante representando a abelha—simbolo do Plano de Ação.

Discursaram autoridades municipais havendo o prefeito local, sr. Ernani Mattos Nabuco, após fazer referencia elogiosas à administração do sr. Carvalho Pinto solicitado á intervenção do governo do Estado, dentro de sua lei de Reforma Agrária, que taxou de "Altamente necessária á economia do país", em duas fazendas, de 17 mil alqueires cada (a de São Francisco e a de Guariroba), as quais afirmou estrangularam a economia da região, impedindo a melhoria do nivel de vida dos colonos. A solicitação do prefeito foi interpretada pelo governador como prova de que a reestruturação da economia agrária operada penetrou na consciencia popular

BITOLA LARGA EM TODA A EFA

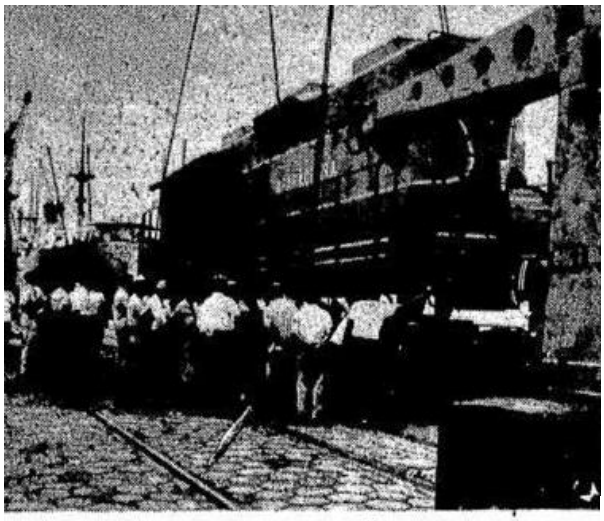
Em seguida o governador e comitiva em trem especial, rumaram para Fernandópolis em viagem inaugural do trecho final da bitola larga da Estrada de Ferro Araraquara. Não obstante o trecho final ir até a cidade de Presidente Vargas a viagem inaugural não ultrapassou Fernandópolis onde no largo da Estação num palanque improvisado, o governador recebeu o título de cidadão de Fernandópolis.

Em seu discurso, agradeceu o prof. Carvalho Pinto as homenagens que lhe eram prestadas ressaltando, a sua

(Continua na 4.a página)

CONVITE

Image 21 - "A Tribuna D'Oeste" Newspaper. *Governor Inaugurates Officially Final Part* – Article, April 10, 1960. Source: ROSSI, Mariana/2009, p. 82.

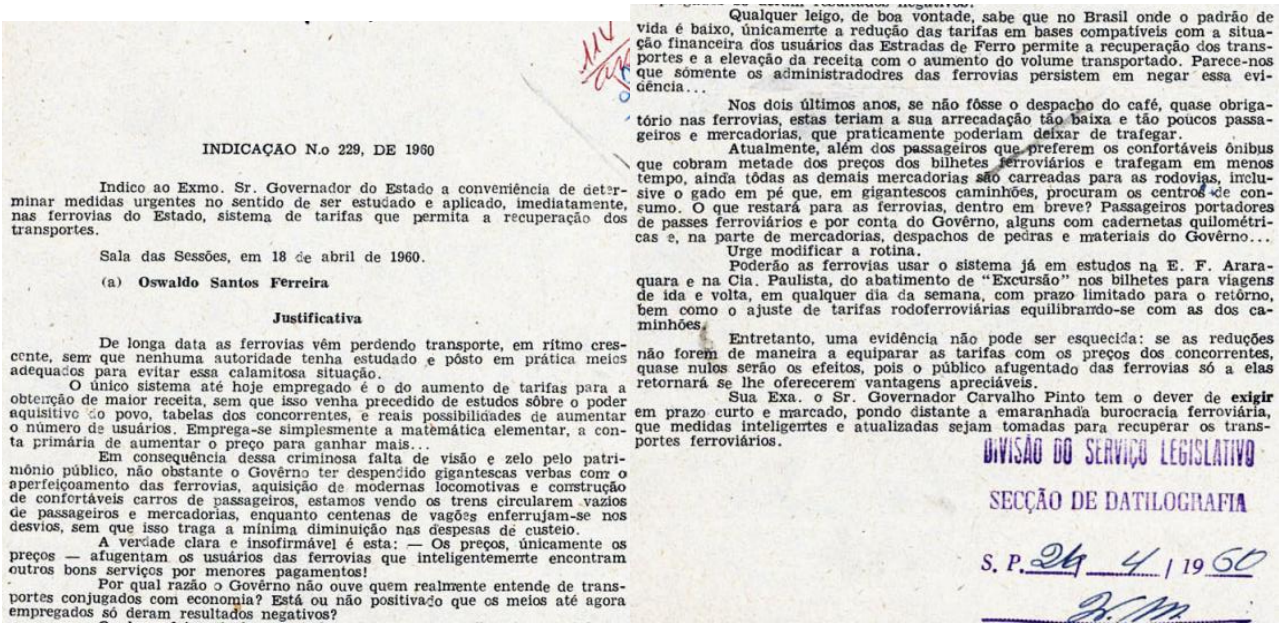


LOCOMOTIVAS PARA A E.F. ARARAQUARA — SANTOS, 17 (FOLHAS) — Foram descarregadas hoje, do vapor "Lóide São Domingos", 5 das 17 locomotivas Diesel-eletricas adquiridas pelo governo de São Paulo, nos Estados Unidos, para reequipamento da Estrada de Ferro Araraquara. No clichê, uma das locomotivas quando era assentada sobre truques.

Image 22 - "Jornal da Manhã" Newspaper. Announcement of the arrival of diesel-electric locomotives on E. F. Araraquara, Janurary/1958. Source: https://www.facebook.com/estacoesferroviarias/photos/

The management of *Estrada de Ferro Araraquarense* was suffering some changes to hold on in that period of decline. All the innovations called the attention of some politicians. Oswaldo Santos Ferreira wrote to the State Governor about that. He asked to reduce the taxes to enable a wider use of rail transport, which would be able to get the railways out of the decay in which they were in. His proposition mentioned the system used by *E. F. Aquaraquara* and *Cia. Paulista*, which

gave discounts if the person buys tickets to come and go together, and adjustments to the taxes of road/rail integration.



INDICAÇÃO N.o 229, DE 1960

Indico ao Exmo. Sr. Governador do Estado a conveniência de determinar medidas urgentes no sentido de ser estudado e aplicado, imediatamente, nas ferrovias do Estado, sistema de tarifas que permita a recuperação dos transportes.

Sala das Sessões, em 18 de abril de 1960.

(a) **Oswaldo Santos Ferreira**

Justificativa

De longa data as ferrovias vêm perdendo transporte, em ritmo crescente, sem que nenhuma autoridade tenha estudado e pôsto em prática meios adequados para evitar essa calamitosa situação.

O único sistema até hoje empregado é o do aumento de tarifas para a obtenção de maior receita, sem que isso venha precedido de estudos sôbre o poder aquisitivo do povo, tabelas dos concorrentes, e reais possibilidades de aumentar o número de usuários. Emprega-se simplesmente a matemática elementar, a conta primária de aumentar o preço para ganhar mais...

Em consequência dessa criminosa falta de visão e zelo pelo patrimônio público, não obstante o Govêrno ter despendido gigantescas verbas com o aperfeiçoamento das ferrovias, aquisição de modernas locomotivas e construção de confortáveis carros de passageiros, estamos vendo os trens circularem vazios de passageiros e mercadorias, enquanto centenas de vagões enferrujam-se nos desvios, sem que isso traga a mínima diminuição nas despesas de custeio.

A verdade clara e insofirmável é esta: — Os preços, ùnicamente os preços — afugentam os usuários das ferrovias que inteligentemente encontram outros bons serviços por menores pagamentos!

Por qual razão o Govêrno não ouve quem realmente entende de transportes conjugados com economia? Está ou não positivado que os meios até agora empregados só deram resultados negativos?

Qualquer leigo, de boa vontade, sabe que no Brasil onde o padrão de vida é baixo, ùnicamente a redução das tarifas em bases compatíveis com a situação financeira dos usuários das Estradas de Ferro permite a recuperação dos transportes e a elevação da receita com o aumento do volume transportado. Parece-nos que sòmente os administradodres das ferrovias persistem em negar essa evidência...

Nos dois últimos anos, se não fôsse o despacho do café, quase obrigatório nas ferrovias, estas teriam a sua arrecadação tão baixa e tão poucos passageiros e mercadorias, que praticamente poderiam deixar de trafegar.

Atualmente, além dos passageiros que preferem os confortáveis ônibus que cobram metade dos preços dos bilhetes ferroviários e trafegam em menos tempo, ainda tôdas as demais mercadorias são carreadas para as rodovias, inclusive o gado em pé que, em gigantescos caminhões, procuram os centros de consumo. O que restará para as ferrovias, dentro em breve? Passageiros portadores de passes ferroviários e por conta do Govêrno, alguns com cadernetas quilométricas e, na parte de mercadorias, despachos de pedras e materiais do Govêrno...

Urge modificar a rotina.

Poderão as ferrovias usar o sistema já em estudos na E. F. Araraquara e na Cia. Paulista, do abatimento de "Excursão" nos bilhetes para viagens de ida e volta, em qualquer dia da semana, com prazo limitado para o retôrno, bem como o ajuste de tarifas rodoferroviárias equilibrando-se com as dos caminhões.

Entretanto, uma evidência não pode ser esquecida: se as reduções não forem de maneira a equiparar as tarifas com os preços dos concorrentes, quase nulos serão os efeitos, pois o público afugentado das ferrovias só a elas retornará se lhe oferecerem vantagens apreciáveis.

Sua Exa. o Sr. Governador Carvalho Pinto tem o dever de **exigir** em prazo curto e marcado, pondo distante a emaranhada burocracia ferroviária, que medidas inteligentes e atualizadas sejam tomadas para recuperar os transportes ferroviários.

DIVISÃO DO SERVIÇO LEGISLATIVO

SECÇÃO DE DATILOGRAFIA

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Image 23 - FERREIRA, Oswaldo Santos, Indication nº 229, April 18, 1960. Presentation of mismanagement and neglect with the railway system, and attempt to preserve it by the E. F. Araraquara and Cia. Paulista. Source: Arquivo Público Digital do Estado de São Paulo.

Unfortunately, the initiatives didn't make the life of the railway employees better. Around 1959[123], the strikes were so intense that the principal rail lines stopped. In Araraquara the workers and passengers were fighting. All travelers needed to continue their trips by bus, which got problems too. The buses that drove until the region of Araraquara went out of the city of São Paulo overcrowded; the companies tried to increase its fleet, but it didn't diminish the dismay of passengers[124]. Araraquara's station remained closed until 1960[125], and it was controlled by a large policing.

Image 24 - Policing at E. F. Araraquara. Image of "Diário de São Paulo" Newspaper. Article titled: *Greve na Paulista atinge clímax e paralisa linhas tronco*. São Paulo, p. 01, April 15, 1959. Source: Arquivo Público Digital do Estado de São Paulo.

[123] "Diário de São Paulo" Newspaper. Article titled: *Greve na Paulista atinge clímax e paralisa linhas tronco.* São Paulo, p. 01, April 15, 1959. Published by Arquivo Digital do Estado de São Paulo.
[124] "Diário de São Paulo" Newspaper - São Paulo, p. 02, April 16, 1959. Published by Arquivo Digital do Estado de São Paulo.
[125] "Diário de São Paulo" Newspaper - São Paulo, p. 06, March 16, 1960. Published by Arquivo Digital do Estado de São Paulo.

In 1967[126], the government of the State tried to unify the rail lines companies: *Sorocabana*, *Mogiana*, *Araraquarense*, *Paulista* and *São Paulo-Minas*, in a company called *FEPASA* (*Ferrovia Paulista S. A.*). The head office of the new railway was in Araraquara, which gave to the city's station the responsibility for the whole region. But because of the road development, this new enterprise didn't work, so in 1998 it was leased with an existing contract until 2018.

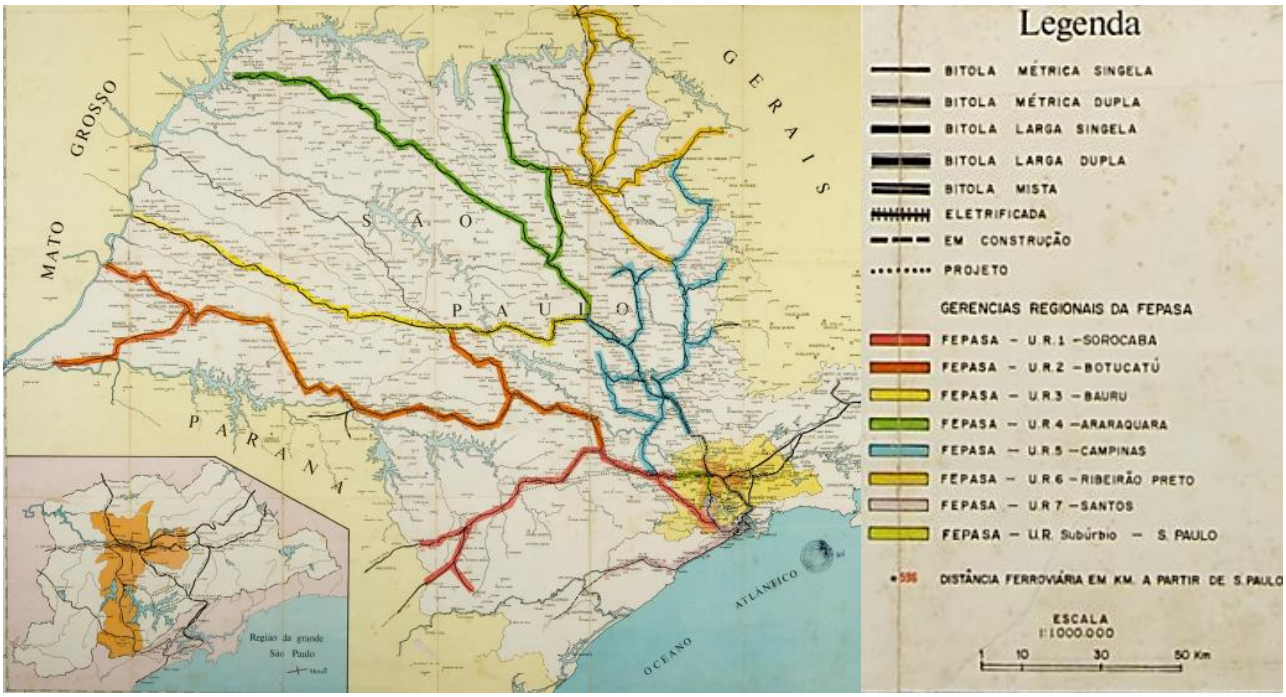

Image 25 - Map of Secretaria de Transporte. Ferrovias do Estado de São Paulo and of the big São Paulo. São Paulo/1977. Configuration of the railway after the creation of FEPASA. Adjustment: LOURENCETTI, Fernanda de Lima (2014). Source: Arquivo Público Digital do Estado de São Paulo.

The railway supremacy was gone, in 1972 the newspaper "Jornal Jales" published that the cities of Araraquarense region were twelve years claiming for highways. In April 04 of the same year, the same newspaper mentioned the creation of a plan to develop the roads in the west part of the State. The project was based on 1.680Km built of roads passing through 119 cities.

A year later, the "Jornal Jales" announced in April 15, the project established by *PROINDE* (Road Plan to the Internalization of the Development), which would work on the upgrade of many roads of Araraquarense, as the same time that it would improve the railway influenced by the Dam of Ilha Solteira, and create a focal point in the city of Nhandeara to connect all the west part of the State to the north part of Paraná.

[126] ZEQUIM,Carolina, p. 44;

Image 26 - Project of PROINDE Published by "Jornal Jales" in Abril 15, 1973. The "X" is the location of Nhandeara. Source: ROSSI, Mariana/2009, p. 86.

The investments on roads in Araraquarense's area didn't stop. In September 9, 1977, another local newspaper, the "Folha D'Oeste"[127], announced a financial asset of 300 million of cruzados, the national money, on the construction of 300Km of highways in the region of São José do Rio Preto.

In the national field, in 1957, the *RFFSA - Rede Ferroviária Federal Sociedade Anônima* (Anonymous Federal Corporation of Rail Network) was created, which decided to dissolve the administration of eighteen national lines to make its management faster, in the same period of the creation of FEPASA in the State of São Paulo. In the big cities, in the 90s, the *CBTU* (Brazilian Company of Urban Trains) was created, while in 1992 the *PND* (National Program of Privatization) was initiated. The *RFFSA* closed in 1999 because of the decline of the railway.[128]

It was in this context that the region of Araraquara started to arise. Most of the cities emerged before the arrival of the railway, but its real development began after this mean of transportation got to them. The urban grid had many changes during the extension of the rail, because it brought many industries and people. The transition of mobility, as can be seen, influenced the industrials heritage too. These kinds of influences made by the different ways of mobility aren't something characteristic from Brazil. France, as will be seen below, can represent this process through a previous experience than the Brazilian one.

[127] ROSSI, Mariana, p. 72;
[128] NETO, José Rodrigues Cavalcanti; CARNEIRO, Fernando Gilbertoni; GIANNECCHINI, Ana Clara. *Avanços e desafios na preservação do patrimônio ferroviário pelo Instituto do Patrimônio Histórico e Artístico Nacional.* Article published by IPHAN, p. 02 - 04;

1.4 Brazilian and French railways: an essay of comparison

England was the pioneer country on the railroad field, but at the end of the 19th century, France was the country which had the most connected territory. Its links weren't made only by railways, it included other means of transportations like buses and subways, and because of that the country became a referential in the transport sector. Thus, while Brazil was receiving the first rails from England, France was becoming more and more independent from the British technology.

In this way, England wasn't chosen to be an example of comparison, because it is a singular case, it was the pioneer in the railway field. France, on the other hand, wasn't the first country to develop this mean of transportation; the importance of its railway grew and became internationally known during the years. It was used as referential in many countries inside and outside of Europe, which included South America. So to establish a parallel between the French and the São Paulo railway as two existing infrastructures in development, it is important to understand some differences between France and Brazil.

The most evident difference is the territorial area. In Brazil fits around 13 countries like France. The São Paulo State has an area of 248.808,80 km²[129], almost one-third of the French territory, so when the spatial dimension needs to be taking on account, it's better to relate France with a State, but in the case of the railway, the politic is managed in national and in regional scale, which makes the comparison more complex when the speech is about economic and politic field.

The United States could be a better example if the subject would be based on the territorial scale or on the British influence, but in the USA there are some discussions about the bad management of the development of the transcontinental connection, and there is the fact that the connections made by the railway between the Pacific and the Atlantic oceans were results of the monopoly.[130] In 1870, when they started to be built, the USA didn't have a reasonable reason for that besides the link between the two oceans. The construction was more expensive than the economic impulse that the railroad could give. However, the belief on the "Gilded Age", which gave the feeling of modernization, made people want the railway improvement.[131] Thus, the probable dishonesty on the finances and bad management are only some reasons to understand why the USA crossing railway would not be the perfect object to be taken as referential. Besides that, in the frame of territorial occupation, the North American railway gave space to the emergence of many urban centers without any kind of planning, what it's not contrary of Brazil.

[129] http://www.saopaulo.sp.gov.br/conhecasp/principal_conheca (2015)
[130] According to an article about the book "*Railroaded:* the transcontinentals and the making of modern America" written by Richard White in 2011. http://www.scielo.br/pdf/topoi/v14n26/1518-3319-topoi-14-26-00184.pdf (2015);
[131] *Idem;* (2015)

In France, the railway arrived in the cities after they already exited, like happened in my case of study. However, the way that the stations were planned in the cities was different. The French planned to put the stations next to the center of the urban grid, while in Brazil, even in areas like Araraquarense, where the cities started to be built before the railway, the stations were located out of town; they were constructed to serve big producers or owners of lands. This Brazilian disconnection between the city and the railway perpetuated over the years, while in France the mobility integration continue to be a global referential. Like this, the reason of these differences between the two cases turned to be a relevant point.

Another good point to be explored in the discussion about Brazil and France railroad is to notice that as the French railway, the Brazilian railroad had influence of the engineers graduated at the *École de Ponts et Chausées,* like happened in many other countries.[132] The school *École de Ponts et Chausées* became an example of knowledge about space planning and industrial equipment, so at the end of 19th century the transport field became an important part of its scientific studies. Many Brazilian engineers went to Paris, around 1,30 students per year[133], not only to the *École de Ponts et Chausées*, so they had influence of the French methodology. Thus, even with the engineering schools created after the arrival of the Royalty in Brazil, the country had many professionals who went to France because of their pioneering in mobility. The comparison between the two rail systems can start to show the exchange of knowledge, which is very important to the comprehension of an infrastructure development.

***

The history of French Railway started twenty seven years earlier than Brazil. In the 1820s[134], France faced a growth of its agricultural and industrial sectors, so the mobility of raw material and products needed to be improved. In the beginning the railway was used to connect mining industry and navigation, which means that the first stakeholders were men related with this kind of economy. As in Brazil, it's a very complex system of mobility, thus, the intention is not rebuild all its development process, but establish a comparative frame between France and Brazil.

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[132] As another example there is Portugal, which can be seen in the article of Ana Cardoso de Matos, *Asserting the Portuguese Civil Engineering Identity: the Role Played by the École des ponts et chaussées*. In MATOS, Ana Cardoso de, DIOGO, M. Paula, GOUZEVITCH, Irina, GRELON, André (ed.), Les enjeux identitaires des ingénieurs : entre la formation et l'action/The Quest for a Professional Identity: Engineers between Training and Action, Lisboa, Colibri/CIDEHUS/CIUHCT, 2009, pp. 177-209;

[133] FIGUEIRÔA, Silva F. de M. *Em defesa do novo Império: a formação de engenheiros brasileiros nas grandes écoles francesas nas décadas de 1820-1830.* Article published in "Formas o Império. Ciência, tecnologia e política e Portugal e no Brasil. Éculo XVI ao XIX", organized by Heloisa Meireles Gesteira, Luís Miguel Carolino and Pedro Marinho. Editor: Paz&Terra, 2014, p. 418;

[134] CARON, François. *Histoire des Chemins de Fer en France. Tombe Premier : 1740-1883.* Fayard Editor/1997, p. 79;

The first remarks made about the railways in France were written by the chief engineer of *Louis-Georges-Gabril* and *Galloi-Lachapelle*. It was a report about what he heard during his trip to England. The text that mentions the railway was published in 1818 in the "Annales de Mines"[135].

> *"Depuis longtemps on faisait usage, en Anglaterre, de chemins garnis de bois pour le roulage des mines d'Allemagne : seulement les applications étaient faites plus en grand. Les chemins de fer ne sont qu'un perfectionnement de ceux-là. Il y a une trentaine d'années qu'ils ont été proposés par M. John Curr, Ingénieur civil à Sheffield.*
>
> *Ils ont été adoptés généralement en Angleterre, pour le petites comme pour les grandes exploitations. Cet usage n'est point borné aux mines ni aux usines : on voit de ces chemins sur les quais, dans les ports, jusque dans les cours et dans les magasins des négociants. Il y en a qui se montent et se démontent à volonté pour les travaux éventuels, pour le transport des matériaux, pour les terrassements, les déblayements, pour la construction des ponts, des routes, le creusement des canaus, etc."*[136]

This exchange of knowledge gave birth to the first railway company in France, the *Compagnie des Mines de Fer de Saint-Etienne*. With this fact, it can be understood that, like in Brazil, the first French railways system had British influences, and besides that, the first investors were men with big financial power. Therefore, the first French railway was built to connect Saint-Etienne and Andrézieux, a region that had a big production of coal. This project was proposed by the engineer Louis-Antoine Baunier[137], graduated in the first group of *L'École de Mines de Paris*, from where he became director. The rail started to be built after the Royal Decree of 1823[138], and it was inaugurated in 1827[139] with more or less 20 Km of length.

Around 1830[140], many discussions started in France after the arrival of this new mean of transportation. One of them was about the public use of the train. So to avoid a complete private use, the *École de Ponts et Chaussées* became responsible for analyzing the development of the

[135] GRAS, L. J. *Histoire des Premiers Chemins de Fer Français et du Premier Tramway de France.* Saint-Etienne Société Anonyme de L'imprimerie Thpeolier/1994, p. 09;
[136] *Idem*, p. 09;
[137] http://www.emse.fr/AVSE/chemfer.htm (2015)
[138] BRASILEIRO, Anisio; ORRICO, Rômulo. *As agência e regulação dos serviços no Brasil e na França: transporte e telecomunicação.* Article published in the magazine "Transportes", vol. XIII, nº 01, p. 5-20, July/2005, p. 08
[139] http://www.premierchemindefer.fr/ (2015)
[140] CARON, François/1997, p. 82;

railway. The professionals from the *École de Ponts et Chaussées* tried to arrive to a perfect technique before turn it in something profitable, and they defended the public necessities instead of the individuals demands.[141]

Next to this period, between 1825 and 1903[142], almost ninety Brazilians engineers went to study in Paris. But they didn't take to Brazil this idea of preventing the railways to become a monopoly of private power. Thus, after 1855[143], while the French were adding to the design of the railway project concerns about its layout and the knowledge about steel and mechanic construction, the Brazilian engineers were getting the existing technology and applying them according to individual interests.

There was a group in France called "Libéraux"[144], it was composed by people that intended to follow the England example of management, which was based on the creation of concessions to give total autonomy to the railway traders, like happened in Brazil until the First World War. But, as already said, the French government didn't want that to happen, so in June 11, 1842[145], a letter describing a balance between public and private interests was approved. After a while, the French concessions system became a model followed by Brazil, like the example given before, which showed that the Brazilian government was interested on put the responsibility of financing branch rail line on private investors.

In 1832[146] the second French line started to work, Lyon to Saint-Étienne, which received the first steam locomotive of the country. In Lyon many new technologies like the one to reduce the inclination of the roads, the use of the gravity, the earthwork, the production of boiler, the bronze and the foundry were created. These innovations normally came from private institutions. The French engineer Marc Seguin made the first French steam machine inspired by the British one known as Stephenson. He inserted a cylindrical boiler beside of the machine. In Brazil it's hard to find big technological improvements, there were some workshops made to repair, maintain and built machines and wagons, like the one that Araraquara has and will be shown in this paper.

[141] http://www.gsd.harvard.edu/images/content/5/3/537902/fac-pub-picon-corpsdespontsetchausseese.pdf (2015)
[142] FIGUEIRÔA, Silva F. de M., p. 418;
[143] *Idem;*
[144] *Idem*, p. 117;
[145] *Idem*, p. 134;
[146] *Idem*, p. 84;

Image 27 – EFA 401 Locomotive, 1940, built in Araraquara.
Source:https://www.facebook.com/estacoesferroviarias/photos

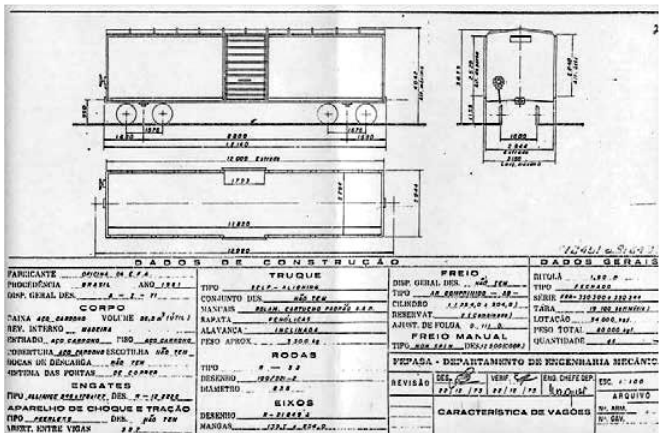

Image 28 – Wagon's plan designed in EFA's workshop.
Source: BARCELLONE, Wilson Lopes Christensen/2009

Even with this difference between the frames of railway technological development, both countries had the railway as a part of their industrial growth to establish internal and external connections. While in the State of São Paulo the link with international market was made by Porto de Santos, where all the lines converge, in France there are two axles, north-south and east-west, which connects the Atlantic Ocean with the central and the south Europe by the cities of Marseille, Nantes and Strasbourg, besides the link made by Lille to Belgium, and all the lines are connected to Paris[147].

This territorial consolidation seemed to be more solid in France than in Brazil because, as in England, the gauge used was the narrow one, with 1,44m, in the whole country. In Brazil, as already saw, it was a kind of mix, which caused some renewal in a big part of the train network.

So in this beginning, the French rail net was divided in three parts:

- Provisional: lines made to do experiments, like the one between Paris and Saint-Germain;
- To trade;
- To travelers.

[147] CARON, François/1997, p. 124;

"Les Chemins de fer n'étaient qu'une composante nouvelle de l'oeuvre systématique d'organization de l'espace entreprise depuis le melieu du XVII siècle, un élément essentiel de l'exercice de géographie volontaire évoqué plus haut"[148]

In contrast to the State of São Paulo, where the agriculture was the principal guider of the railway, in France, as can be seen by the division described above, the agriculture wasn't a strong actor in the beginning of the French railway development. Some branches were demanded by agriculture producers in 1836, but it was after 1890, when the urban centers necessities of basic products like food increased, that this economic sector started to influence the railroad.[149] This urban influence happened in both countries because the cities' needs were almost the same and the mobility facilitates the growth of not durable products. To illustrate it in France, Caron mentions the *Roquefort* cheese, which doubled its production between 1887 and 1914 after the advent of the rail.

In 1843, long-distance lines, like Paris-Orleans and Paris-Rouen, started to be built. After 1849 the train stations became to be considered like an urban monument.

"La gare cette cathédrale du siècle, n'est que l'image d'un nouveau cycle de circulation qui, à un siècle de distance, s'attaque au tissu urbain héreté."[150]

Like this, what *étaient considérés par les ingénieurs comme des constructions industrielles par essence, où l'intervention des architectes était seulement envisagée à l'extrême fin des travaux pour en flatter l'aspect urbain*[151], started to be faced as a monument in the middle of the city.

After 1870 France had a strong economy and a high level of industrial production. For the railway, new viaducts were built and a new economic sector started to be pursued, the tourism. A technological improvement aided the development of this economy, in 1883 the *Express L'Oriente*, a train with comfortable wagons to travelers, was created. In the same decade, caused by the arrival of metallic construction, more infrastructures were built. Normally, the technological advance tried to follow the creation of new railways, in 1900 the first electrics locomotives arrived in Paris, but only after the First World War they became part of the new lines.[152]

[148] CARON, François/1997, p. 123;
[149] *Idem*, p. 108/82/132;
[150] Published by DUBY, Georges. *Histoire de la France Urbain – La ville de l'âge Industriel.* Edition Seuil Collection "L'univers historique" 1983, p. 74;
[151] Quote from Marie-Laure Cronier Leconte used by François Caron in *Histoire des Chemins de Fer en France. Tombe Second: 1883-1937*. Fayard Editor/1997, p. 184;
[152] http://www.sncf.com/fr/portrait-du-groupe/histoire-sncf?date=1883#anchor-1883 (2015)

Until the First World War the railways were growing according to the regionals' necessities. Paris and Lyon were the "heart" of two big industrials regions between 1889 and 1914.[153] So, as in São Paulo, in France, like in other European countries, most of all factories, principally the steel mill, occupied the territory nearby the railway. Nevertheless, after the First War the railways suffered some changes, which damaged the economy.

During the War, the USA influenced a lot the train renewals. They implanted the "dispatching-system"[154] to control the circulation of the trains. Besides that, they inserted refrigerated wagons to transport meal, and the way of management and interaction between the lines were modified to be more rational.

In a rhythm that could be misunderstood as a progress moment, the French railways were passing through similar problems to those of Brazil, because of the high prices to use and maintain this mean of transportation. Caron says that the principal cause to the decrease of the rail income was responsibility of the government since it didn't allow the companies change the tariff in charge of the lines development. Like this, after the war, around 1928[155], Italy, Belgium and Holland had a better railway system than France.

In the inter-war period, the circulation of passengers increased, which caused reforms and amplification of some stations, but everything was done in the cheapest way. In 1930 studies about diesel engine were done, and between 1931 and 1933 the Frenches built their own prototype.[156] In Brazil this technology came from USA, and as already mentioned, *Estrada de Ferro Araraquarense* received its first diesel locomotives in 1958, during the moment of decay of the Brazilian railway.

> *"Les municipalités furent de plus en plus soucieuses de meiux intégrer la gare et le chemin de fer dans la ville et se monstrèrent souvent prête à faires des sacrifices financiers, par le biais de l'établissement de surtaxes provisoire. La gare pourrait être un enjeu important d'une politique de dévelopment touristique. Mais, sourtout le developpement de la circulation, automobile principalment, redait urgent l'aménagement des abords de la plupart d'être elles. Elle rendait tout aussi urgente l'amélioration des croissements entre le chemin de fer et le voies de voies de circulation urbaine et toutières."*[157]

[153] CARON, François/1997, p. 286;
[154] *Idem*, p. 606;
[155] *Idem*, p. 912;
[156] *Idem*, p. 182;
[157] *Idem*, p. 919;

Thus, the concern that France had with its railways in the beginning of the 20th century was totally contraire of Brazil. While the French engineers looked for make the station a place more comfortable, with good lighting and decorations concerning with its period and place, with the elaboration of a space able to attract people with its comfort and service, in Brazil the passenger transport dizzily dropped during the 50s.

To control the big companies' interests on the railway development, in 1937[158], in France the *SNFC (Société Nationale des Chemins de Fer)* was created. This Society was almost like *RFFSA (Federal Railway System Corporation)* in Brazil, but after a while the Brazilian national society was replaced by regional societies, like *FEPASA (Ferrovia Paulista S.A.)* in the State of São Paulo. So, as explained before, the scale of the Brazilian territory is bigger than the French one, so the international line between Lille and Brussels, which links France to Belgium since 1842, can be compared with the national line that connects Rio de Janeiro and São Paulo. According to Anisio Brasileiro and Rômulo Orrico, both of them were important railways built by private investors with the participation of the government in the drafting of the taxes or with the provision of concessions.

However, the Brazilian government started to leave behind the railways in the mid-1940, while the French government continued to give it support. During the Second World War, in France, the train had a strategic value, while Brazil, without made a direct part of the war, was being influenced by USA and the high prices of the rail infrastructure, which resulted on the improvement of the paving road. So, after the War, Brazil created the Joppert Law, as already mentioned, which increased the autonomy of the highways, while France continued to be interested on the development of the railway. In 1946, it started to electrify all the stations and after a few years, in 1967, the French railroad was giving good results. They created the high speed train, which started to compete with the airplane. This technology held on the importance of the train and increased its efficiency.

> *"The policy on High-Speed must be inserted in a context in which rail transport was defeated in Europe, as early as the mid-1960's, by road transport and was moving in search of a stimulus to the revitalization in an area dominated by increasingly severe traffic congestion"*[159]

In a context of modal redistribution in Europe, France encouraged new projects to the railways. In the 70s many studies were developed, which helped the French train dominate the

[158] BRASILEIRO, Anisio; FILHO, Rômulo Orrico, p. 06;
[159] GIUNTINI, Andrea. *Will railway save Europe? A short history of High-Speed Trains.* Published by CIDEUS and CEHCIUL in *História, Patrimônio e Infraestrutura o Caminho de Ferro: Visões do Passado e Perspectivas do Futuro,* organized by Ana Cardoso de Matos e Magda de Avelar Pineiro, Editor:CEHC-IUL/CIEHUS-UÉ, 2014, p. 46*;*

European continent on the 80s, after the experience of Paris-Lyon in 1981, when the *TGV (Train à Grand Vitesse)* was created.[160]

So, the French government kept his direct actions on the rearrange of the railway, so all changes proposed should be accepted by the Transport Minister. Brazil followed the British way; it decentralized the railway responsibility from the government and gave it to the private power with the program PND in 1990, as already described, and created the "Regulating Agents"[161]:

- *ANNT (National Agency of Land Transportation)*[162]: responsible for: concessions associated with land transportation infrastructure (railways and highways); permission given to mass transportation; permission to land transport to offer transportation services.
- *ANTAQ (National Agency of Water Transportation)*[163]: responsible for giving permission for navigation and for the operation of the ports on the infrastructure and economic scope;
- *DNIT (National Department of Transport Infrastructure)*[164]: concerning about the railroad, the Law 10.233/2001 says that this organ is responsible for Federal Road System infrastructure to be implemented, under the jurisdiction of the Ministry of Transport.
- *CONIT (National Council for Integration of Transport Policies)*[165]: it is responsible for the integration of means of transportation, thus, it is responsible for the interaction of the three agencies mentioned above.

Even each institution having each own responsibility, eventually their functions get mixed interfering one on the work of the other. In France the tasks are better defined:

- Public services is responsibility of the Ministry;
- The State-owned enterprises is in charge of the Infrastructure;
- The private sector is responsible for the patterns of development.

Presently, even after the SNFC be transformed in a private company, the French government can control all the concessions and operations made by the railways, in contrast with Brazil, where it's hard to comply with a contract in a straight way. So, while in France the challenge is to maintain the government participating in an active way producing incentives to establish a good competition with the external market, Brazil needs to pass through much bigger upgrades[166]. It requires the remodeling of infrastructure, which today has many parties in total abandonment, and a revaluation of this means of transportation by the society to improve its use.

[160] GIUTINI, Andrea, p. 51;
[161] BRASILEIRO, Anisio; FILHO, Rômulo Orrico, p. 17;
[162] http://www.antt.gov.br/index.php/content/view/4871/Competencias.html (2015)
[163] http://www.antaq.gov.br/Portal/default.asp? (2015)
[164] http://www.dnit.gov.br/acesso-a-informacao/acoes-e-programas (2015)
[165] BRASILEIRO, Anisio; FILHO, Rômulo Orrico, p. 19;
[166] *Idem*, p. 19;

CHAPTER II. The Railway and the Urbanism in São Paulo: is it a different model from Europe?

SUMMARY IN FRENCH

Ce chapitre présente une description détaillée de la zone d'étude, il s'agit d'une présentation des caractéristiques de l'écosystème où l'*Estrada de Ferro Araraquarense* est située ainsi que l'organisation spatiale qui la constitue. On a aussi cité en expliquant les vocabulaires utilisés par Pierre Mombeig, l'un des premiers érudits analysant l'Ouest Paulista. En fait il a utilisé l'expression «Poneer Fringe» pour signifier l'ensemble de toute la région et l'expression «Bouche de la Brousse» pour les villes considérées comme les pôles économique de l'Etat suite à l'implantation de chemin de fer.

Dans une autre étape on a effectué une étude spécifique de la ville d'Araraquara, la ville où se situe la station choisisse comme cas d'étude pour notre travail. Cette même partie présente l'évolution urbaine de ladite ville ainsi que le rôle de l'introduction de chemin de fer dans son évolution, elle explique aussi l'influence de chemin de fer sur le processus d'expansion de la ville d'Araraquara. L'influenece de chemin de fer peut être aperçu d'une façon direct puisque ce dernier a poussé vers la création de plusieurs services tout autour ou d'une façon indirecte puisque elle il a encouragé l'immigration et tout ce que cette dernière a apporté de cultures.

Dans cette étude comparative certaines interventions de l'urbanisme Français ont été citées, cependant, la dernière partie de ce chapitre montre que ces interventions n'ont pas des rapports directs avec le chemin de fer, puisque la France été préoccupée par l'intégration des gares dans la ville et avec les autres moyens de transport, une préoccupation qui n'a pas apparue dans les villes de la *Estrada de Ferro Araraquarense*. C'est pour cela qui Lyon, Marseille et Lille ont été présentés comme des exemples de plans de conservation et d'amélioration.

2.1 The Region of São Paulo: "Pioneer Fringe" and "Bouche de la Brousse"[167]

"Pioneer Fringe" was an expression used by the American geographer Isaiah Bowman between 1920 and 1930[168] in a study based on the mapping of the pioneer zones of all countries. Pierre Monbeig adopted this term in mid-1930 after his trip to Brazil, where he started the first university course of geography in the country, in 1934[169].

> *"Plutôt que de "front", il vaut mieux parler de "frange pionniére", car c'est rarement par une coupure brutale, a plutôt par une progression plus ou mois rapide que l'on passe des espaces organisés à ceux que le deviennent."*[170]

This quote was used by Nogueira to explain why Monbeig chosen that expression instead of "pioneer front". To Monbeig, the word "front" could be interpreted as an analogy to military acts, because his work was written during the inter-war period. At the same time, the president Getúlio Vargas (period called "Estado Novo"), in Brazil, intended to create a national identity. So the territory integration was part of the government plans through the development of the "March Westward", while the *National Councils of Geography (CNG)* and the *National Councils of Statistics (CNE)*, which became the *Brazilian Institute of Geography and Statistics (IBGE)*, were created.[171]

As already explained, the railways made part of this progress, thus in the 30s, the industries started to be developed. The State heritage was growing to the region known as "sertão"[172]; the initiatives from "Estado Novo" provided new technologies and scientific knowledge[173] to improve the relationship between the pioneer and the nature.

The first regions dominated by the "bandeirantes"[174] were the spike between two rivers, where the railway passed through. In a territory with so many rivers' connection, Monbeig needed to understand why ships weren't used to complement the rail line, while in France the train was supposed to complement the navigation. He found out that the rivers from the State of São Paulo change their flow along their length, so some parts weren't able to conduct this kind of transport.

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[167] These expressions will be used in their original language, because a literal translation can deform the writer idea.
[168] NOGUEIRA, Carlos Eugênio. *Frentes pioneiras e formação territorial: a Associação dos Geógrsfos Brasileiros (AGB) na consolidação do campo geográfico no Brasil.* Publicação Revista Brasileira de História da Ciência, V. f, nº 2, Rio de Janeiro/2012, p. 325;
[169] *Idem*. p. 321;
[170] Citation of Pierre Monbeig found in the *Annale de Histoire Econoique et sociale*, 1937, used by Carlos Eugênio Nogueira, p. 327;
[171] NOGUEIRA, Carlos Eugênio, p. 320/326;
[172] Initially this word was used to appoint unknown territory;
[173] NOGUEIRA, Carlos Eugênio, p. 326;
[174] Explorer of new lands identified by Monbeig as people who had ambitions to find a place where he could start a better life, or someone who just follow a tradition, because his father used to do that, he does too;

Image 29 – Map from the "Comissão Geográfica de São Paulo", 1894. The black part is the territory already explored and the part marked with stripes represents the territory under recognition. Source: CAMPOS, Cristina/2010, p. 12.

Other geographies characteristics pressed forward the expansion to the west portion of the State. The kind of soil was one of them, the red soil called the attention of the coffee farmers, but this is not the principal explanation of the extension of the territory of São Paulo. At Araraquarense, only Araraquara had this type of soil, while Alta Araraquarense had a basaltic soil, what explains the less diversity, as already mentioned, of its forests, which was composed by small trees about 20m of height. Mombeig reported that because of this kind of soil the new urban areas seemed to be part of a beach when they were without lights.

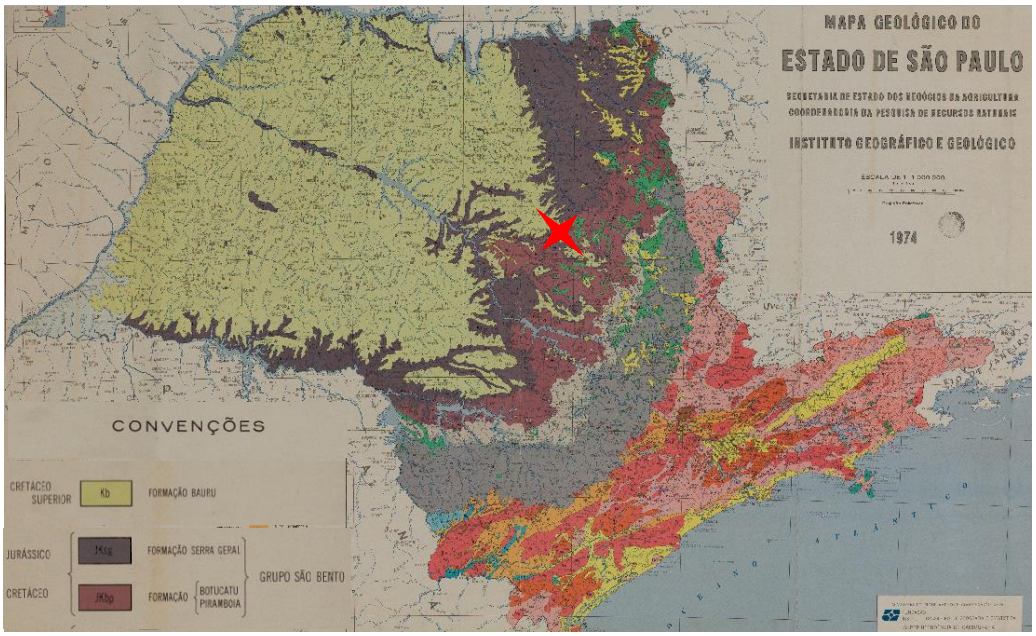

Image 30 – Geologic Map 1974. The red mark is the location of Araraquara. Adjustment: LOURENCETTI, Fernanda de Lima. Source: Arquivo Público Digital do Estado de São Paulo.

Through an analysis done on the maps of municipality's development, it can be seen that the diversification of natural characteristics of the territory didn't stop its exploration and the permanence of man. Monbeig rose that in the end of the 19th century around forty new cities were created. Between 1900 and 1910 that number decreased and only in 1934 it started to grow again, but only between 1937 and 1938 the number was significant.

Image 31 – Map of the cities divisions. Departamento de Estatística do Estado de São Paulo. São Paulo/1889. The dark mark is the territory of Araraquara. Adjustment: LOURENCETTI, Fernanda de Lima. Source: Arquivo Público Digital do Estado de São Paulo.

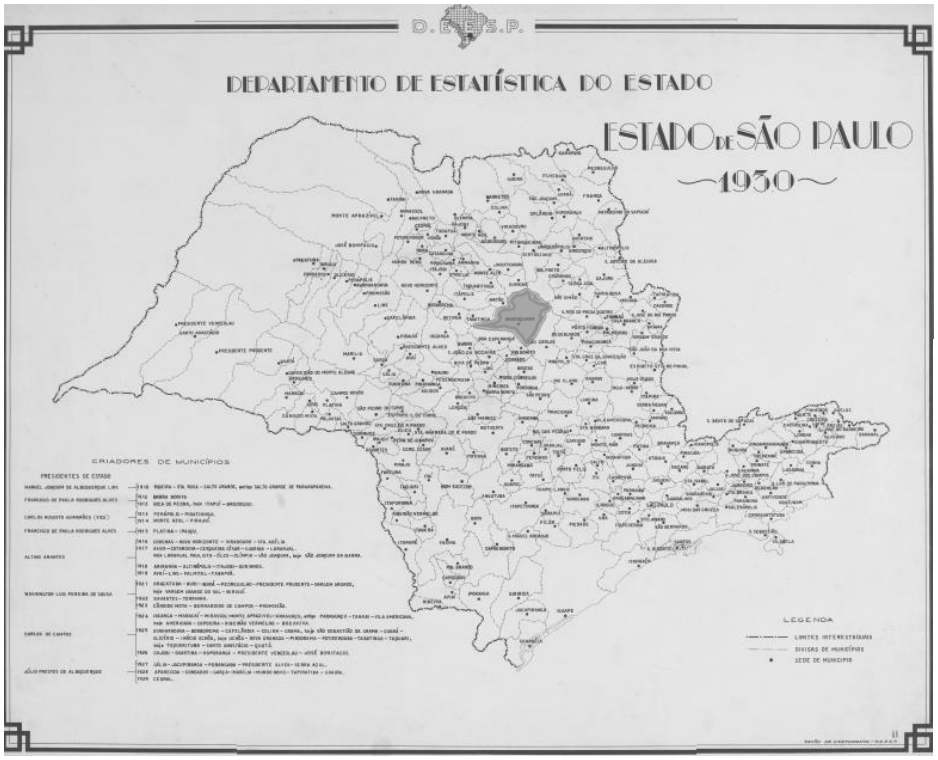

Image 32 – Map of the cities divisions. Departamento de Estatística do Estado de São Paulo. São Paulo/1930. The dark mark is the territory of Araraquara. Adjustment: LOURENCETTI, Fernanda de Lima. Source: Arquivo Público Digital do Estado de São Paulo.

Image 33 – Map of the cities divisions. Departamento de Estatística do Estado de São Paulo. São Paulo/1950. The dark mark is the territory of Araraquara. Adjustment: LOURENCETTI, Fernanda de Lima. Source: Arquivo Público Digital do Estado de São Paulo.

The maps almost match with the remarks made by Monbeig. The maps listed the cities created since 1850 until 1950. From 1850 until 1889 appeared almost 83 new towns, after that no cities were mentioned, only after 1910, which confirms the decrease described by Monbeig. Before 1934, by the maps around 87 new cities can be found, so in twenty years the same number of urban centers as in thirty seven years (1850-1889) were created, but in these thirty years, 1881, 1885 and 1889 had the highest number of new cities, with 23 centers, more than ¼ of the total. It doesn't represent the forty cities mentioned by Monbeig, but can justify his argument about the fast territorial development in the end of the 19th century. To finish the analyses, it can be seen that the maps don't show any register between 1937 and 1938, only in 1948, with seventy two cities.

All this progress was the reflex of the increase of population and deforestation followed, or following, the expansion of the railway. It's important to remember that at Alta Araraquarense the railway normally got to the city after the urban center had already established its place. Below, it will be presented all the cities[175] of the principal line of *Estrada de Ferro Araraquarense*.

	CITY	YEAR OF THE ARRIVAL OF THE RAILWAY
1	Araraquara	1898
2	Tutóia	1914
3	Cesário Bastos	1898
4	Eng. Rosa Martins	1927

[175] http://www.historiadaefa.net/paginas/estacoes/estacoes.htm (2014)

5	Bueno de Andrada	1898
6	Silvânia	1901
7	Matão	1899
8	Pimenta Bueno	1901
9	Dobrada	1955
10	Dobrada Nova	1955
11	Santa Enerstina	1901
12	Carlos Magalhães	1902
13	Eng. Bush Varella	1931
14	Tarquaritinga	1901
15	Sócrates de Andrade	1931
16	Jurupema	1908
17	Jurupema Nova	1955
18	Icoarama	1909
19	Candido Rodrigues	1908
20	Candido Rodrigues – Nova	1955
21	Posto D	1931
22	Fernando Preste	1909
23	Fernando Preste - Nova	1955
24	Estrada Agulha	1966
25	Santa Sofia	1909
26	Santa Adélia	1909
27	Santa Adélia - Nova	1955
28	Jacaúna	1925
29	Pindorama	1909
30	Catanduva	1910
31	Catiguá	1910
32	Japurá	1911
33	Uchôa	1911
34	Cedral	1912
35	Cedral – Nova Mercadorias	1950
36	Cedral – Nova Passageiros	1950

37	Eng. Schmidt	1912
38	São José do Rio Preto	1912
39	Rio Preto Paulista	1950-1960
40	Gonzaga de Campos	1933
41	Mirassol	1933
42	Bálsamo	1941
43	Eng. Balduíno	1941
44	Tanabi	1959
45	Ecatú	1943
46	Cosmorama	1943
47	Simonsen	1947
48	Votuporanga	1944
49	Valentim Gentil	1949
50	Meridiano	1949
51	Fernandópolis	1949
52	Conde Prates	Demolished, so no records was found.
53	Estrela D'Oeste	1951
54	Jales	1951
55	Urânia	1952
56	Santa Salete	1957
57	Pimenta Bueno	Demolished, so no record was found.
58	Santana da Ponte Pensa	1952
59	Três Fronteiras	1952
60	Santa Fé do Sul	1952
71	Presidente Vargas	1952

Image 34 – Region Araraquarense. Map proposed by Milliet in 1938 to repreente the region of Araraquarense. Adjustment: LOURENCETTI, Fernanda de Lima. Source:http://www.scielo.br/scielo.php?pid=S0101-41612012000200006&script=sci_arttext (2014)

Image 35 – Map of *Estrada de Ferro Araraquarense*. Source: http://www.geocities.ws/pscalvo/paginas/estacoes/estacoes.htm (2015)

As explained before, Alta Araraquarense had its territory divided in many farms by Patrício Lopes de Souza, which later were divided again by the company "Glória & Furquin" and sold. Normally people divided each farm with dimensions around 1000[176] bushels, which reflected on the

[176] MONBEIG, Pierre, p. 212;

profiteering of the region. Where today are Fernandópolis and Monte Aprazível, it existed pieces of land with dimensions between 15.000 bushels and 208.000 bushels.

The land speculation resulted on the use of bank credits. People wanted to buy land and divide it again to get money fast. Usually the settlements were located next to the plantations. The farmers didn't live in their land, but in the cities nearby them. They had a house to visit in the farm, but they were built far from the colonies. The real manager lived in the farm, but his house, close to the house of his boss, was out of the settlement, and the only building next to it was the accounting and statistics' office. So as already mentioned, the Brazilian economy wasn't so consolidated as in Europe, so *the meeting of the appetite of national and international ambitions* (ANDRADE/201I), influenced the position of the new urban centers, from where the farmers administrated their lands.

Araraquara is an example of a city created according to the interests of some settlers and investors, like many other cities that were, for a while, the last urban center before the unknown land. These cities were nominated by Monbeig as "Bouches de la brousse" (Mouths of Hinterland). They became big producers and because of that they were the end of the rail trail for many years. On the way of *Estrada de Ferro Araraquarense*, he considered "bouches de la brousse" four cities:

- São José do Rio Preto: its first constructions were made in 1842; it was founded in 1857; its railway arrived in 1912;
- Mirassol: it was founded in 1910; its railway arrived in 1933;
- Tanabi: it was founded in 1882 (before Mirassol); its railway arrived in 1959;
- Votuporanga: it was founded in 1937; its railway arrived in 1944;

With these data can be noticed that Tanabi, located before Votuporanga, had its station 16 years later than the next city. So some "bouches de la brousse" did not become the final point of the railway. Araraquara was the entrance of this new region, its soil called attention of the pioneers, and it was the final point of the rail line for nineteen years, during the transition of the 19th century to the 20th century. Its importance is explicit by the name given to a pioneer region and to the railway created to supply the new territory. As such case, Araraquara was the first city of a whole region affected by the changes brought by the mobility of progress.

2.2 The City of Araraquara and the Railway

> *"Les agglomérations qui surgissant n'étaient pas comme les villes d'aujourd'hui – si usées qu'il devient difficile d'y déecouvrir la marque de leur histoire particulière – confondues dans une forme de plus en plus homogène où*

> *s'affirment seulement les distinctions administratives. Au contraire, on pouvait scruter les villes comme un botaniste les plantes, reconnaissant au nom, à l'aspect et à la structure de chacune son appartenance à telle ou telle grande famille d'un règne ajouté par l'homme à la nature: le règne urbain."*[177]

The urban center that originated Araraquara emerged before the railway arrival like usually happened in the region of Araraquarense. To understand the participation of the railway in the urban development, it is necessary to understand the city's history. The historiographical survey presenting the context of urban and industrial heritage development presented in this chapter is able to raise the importance of the mobility. Like it is in France, if the collected materials are well managed, they can call attention and be further studied, which would improve the comprehension of the territory expansion, the social changes and the economic development.

The city is located around 273Km from the city of São Paulo, the capital of the State. Its latitude south is 21º47'37" and its longitude is 48º10'52", as part of the Araraquarense region, with its height around 500m[178], Araraquara is on an elevation of 664m. The first thing that attracted people was the existence of gold, around 1720, but the first economic predecessors were the culture of cotton, sugar-cane and cattle, only after some years, nearby 1870, the coffee arrived.[179]

The first registers about the city are from 1724[180], they were written by Luis Pedroso de Barros, a "bandeirante". He used the expression "Campos de Araraquara" to refer to the region. The ways opened to find gold through the region got until Cuiabá, in the State of Mato Grosso. This pioneering work was hindered by some Indians population, the Caiapós and the Guayanás. So, the first new settlements were done only in 1811[181] by some criminals from Piracicaba, Itu and Porto Feliz.

Joaquim de Arruda is recognized as the first allotter from Araraquara's area, but he never made use of it. As such, the legitimate founder of the village was Pedro José Neto, who got to the lands in 1790 as a fugitive from Itu. He started to create cattle and some agricultural production, and in 1805 he built a Temple of Faith.

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[177] CLAUDE, Levi-Strauss. *Tristes Tropiques.* Librairie Plon, 1955, p. 124;
[178] MONBEIG, Pierre, p. 40;
[179] PACHECO, Carlos Américo. *Café e Cidades em São Paulo: Um Estudo de Caso da Urbanização na Região de Araraquara e São Carlos, 1880/1930.* Master's thesis – UNICAP/1988, p. 132;
[180] TÁCITO, Bruna Stéphanie. *Formação da Estrutura Agrária na Formação do Tecido Urbano das Cidades do Oeste Paulista – Linha Araraquarense.* IC – UNESP/2009, p. 12/13;
[181] LANÇA, João Felipe de Almeida, p. 31;

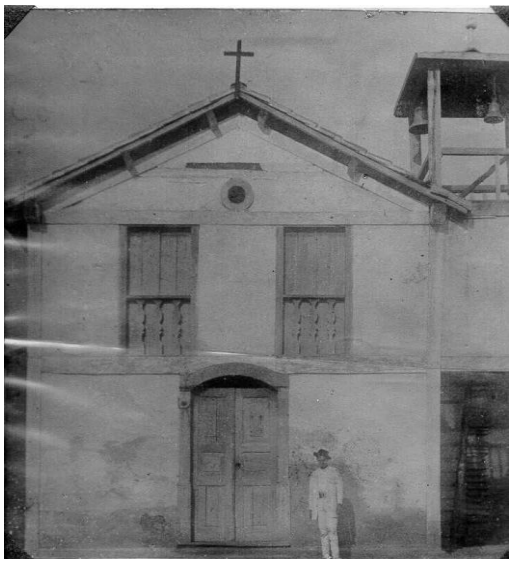

Image 36 – São Bento Chappelle in 1817. Soucer: CD-ROM "Araraquara-100 anos de fotografia", Second edition, collected by the researchers of UNESP/Bauru.

> *"Dans certaines réegions reculées de l'Etat, on reconnait ces premiers village brésiliens à leur nom d'aldeia ou de missão, et mieux encore à leur plan ampli et fonctionnel : église au centre, commandant une place retangulaire de terre battue envahie par l'herbe, le "Largo da Matriz", et entourée de rues se coupant à angle droit, bordées de maisons basses replaçant les huttes indigènes d'autrefoi. Les planteurs, "fazendeiros", jalouaient le pouvoir temporel des missions qui freinait leur exactions et les provait aussi de main – d'ouvre serville. Ils laçaient des expeditions punitives à la suite des quelles prêtres et Indiens se debanaient."*[182]

Like normally happened with other urban centers, in the beginning the new population center followed the laws which came from the city of São Paulo. The different productions of sugar-cane, corn, cereals, Tabaco, cotton and cattle started to be developed, but the real interest on the division of the lands came after the gold discovery in Cuiabá[183]. Thus, in 1812[184], the Sergeant Major José Joaquim Correa da Rocha went to Araraquara to do this division. The first owners were residents from Itu, Porto Feliz and Piracicaba, like Major Joaquim Duarte do Rego, Priest Joaquim Duarte Novais, Domingos Soares de Barros, Joaquim Mariano Galvão, João Manuel do Amaral, Joaquim José Pinto Morais Leme and Agostinho de Camargo Penteado.

[182] CLAUDE, Levi-Strauss, p. 127;
[183] TÁCITO, Bruna Stéphanie, p. 13-15;
[184] LANÇA, João Felipe de Almeida, p. 31;

In August 22, 1817[185], the agglomeration of 303 inhabitants was considered as a real village called São Bento de Araraquara, it was coordinated by a priest and subordinated to the city of Itu, because its land was part of the territory of Itu. The recognition of the new population center happened after that a representative of its population, Nicolau Pereira de Campos, send a request to the Bishop of São Paulo.

Since of this moment, the urban heritage of Araraquara started to be built. One of the lands' owners, the Priest Joaquim Duarte Novaes, donated 400 "braçadas em quadra"[186] to the construction of the first Chappelle. The land around it was plot and sold, the urban grid had an orthogonal design in the Est-West named as avenues, and it had its streets in a transversal design in the sense of North-South, caused by the small topographic slope [187].

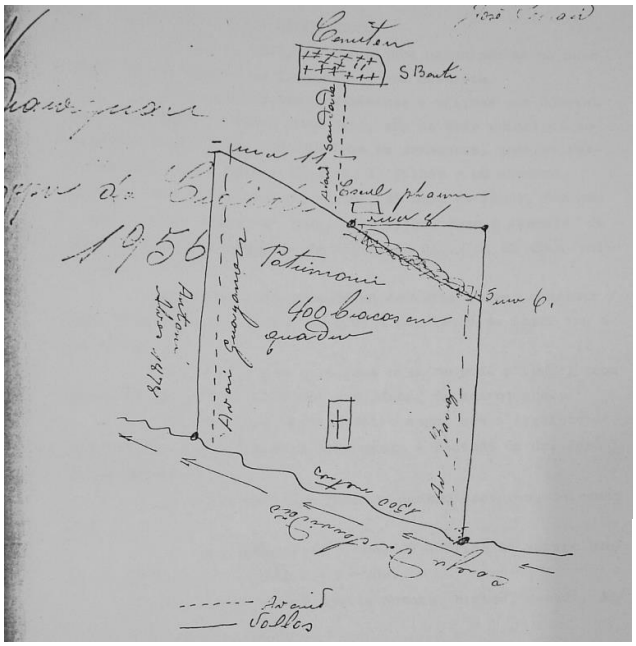

Image 37 – Sketch from 1956 in which can be seen the area donated by Priest Joaquim Duarte Novaes. Source: LANÇA, João Felipe de Almeida, 2009, p.32.

Since then, the city started its development in the same time as the emergence of new necessities. Since October 31, 1821[188], the village was administrated by Piracicaba. The population growth resulted in the construction of a jail in 1829[189], because the inhabitants were afraid of evildoers, and in the promotion of the village to the status of municipality in July 10, 1832. Thus, Araraquara started to administrate a territory which in the beginning included some areas where new cities of Araraquarense and areas between São Carlos and Jaboticabal emerged[190]. The evolution of its administrative boundaries can be seen in the images 31, 32 and 33 of this report.

[185] LANÇA, João Felipe de Almeida, p. 31;
[186] This was the measurement unit used in that period. One "braçada" is the same as 2,22m.
[187] LANÇA, João Felipe de Almeida, p. 32/33;
[188] http://www.arquivoestado.sp.gov.br/exposição_oeste/cidades.php?cidade=5 (2014);
[189] TÁCITO, Bruna Stéphanie, p. 15;
[190] PACHECO, Carlos Américo, p. 25;

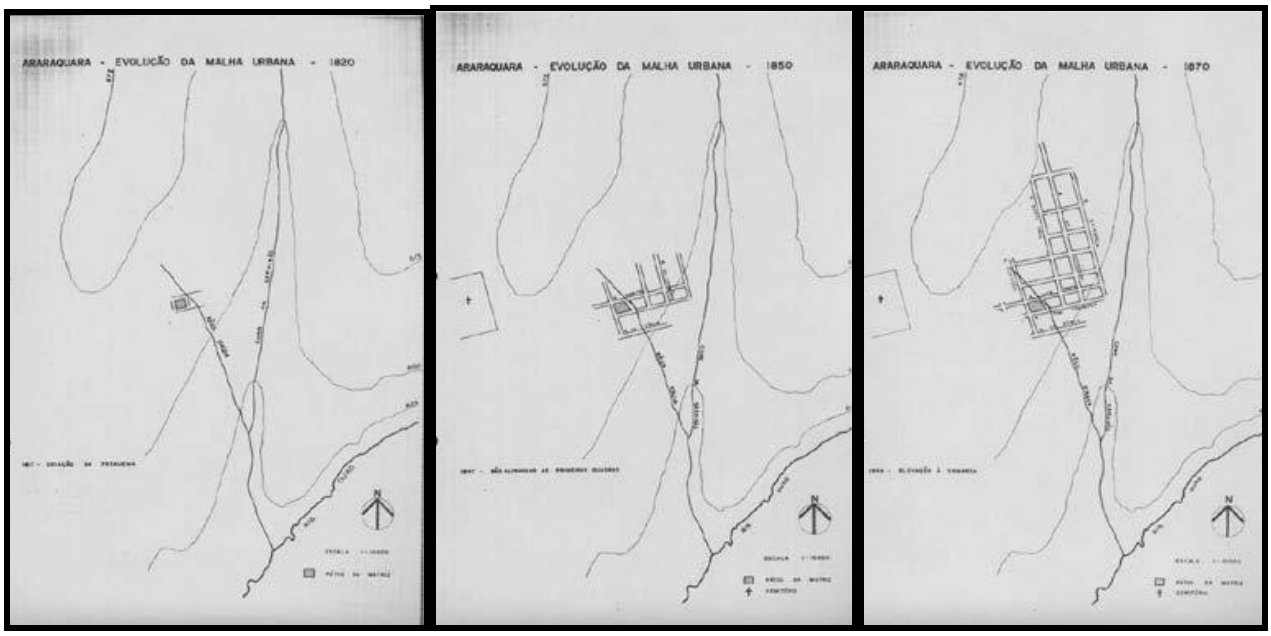

Image 38 – Development of Araraquara in 1820/1850/1870. Source: Barcellone, Wilson Lopes Christensen, 2009, p. 27.

The expansion of the urban center started almost in the same period of the "Bill Arbedeen" Law. Thus, in a moment which the city required workforce, the slaves prices were rose from 306 réis in 1830 to 1176 in 1852. To try to cross this challenge, in 1865[191], the Municipal Council of Araraquara and the American Consul started to attract immigrants to work in Araraquara.

However, the infrastructures were expanding. The water was regularized and in 1868[192] the cemetery located beside the church was moved because of its bad smell and the possibility of contamination of the river next to it. After the cemetery relocation, in the same year, the river was piped.

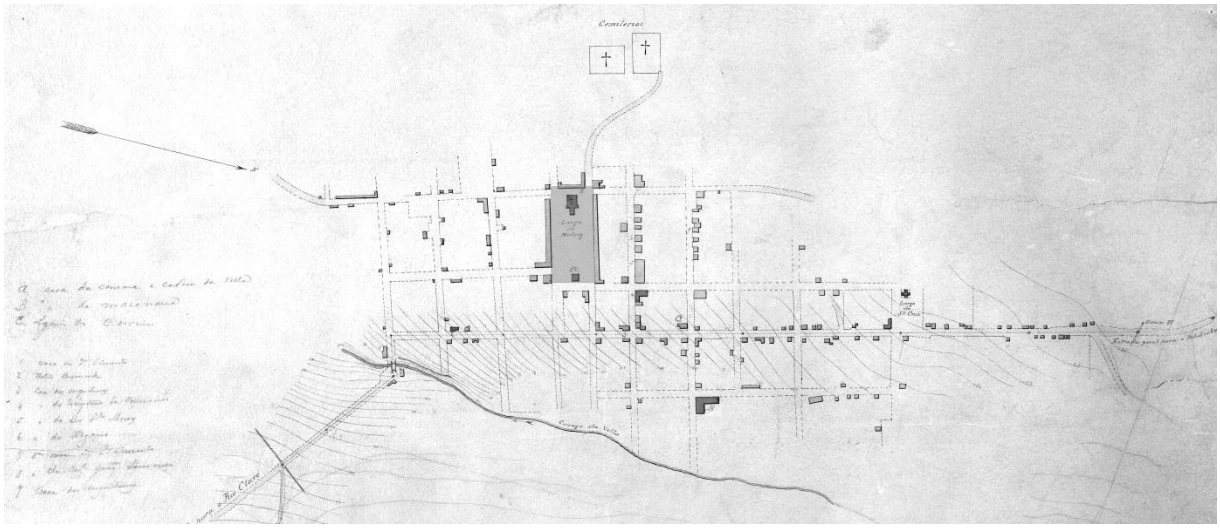

Image 39 – Map of 1880 with the new location of the cemetery. The dark mark is the "Largo Municipal" with the church. Source: Arquivo Digital Biblioteca Nacional (Brazil).

[191] PACHECO, Carlos Américo, p. 30/31;
[192] BARCELLONE, Wilson Lopes Christensen, p. 26;

At this moment, the concern about the sanitization started to grow. In 1867[193], the first "Código de Posturas" was created; it was composed by some rules made for the urbanization and its population. Some of its exigencies were: the alignment of houses and streets, the prohibition of straw houses and the creation of loose animals. This last demand caused the closure of backyards, which influenced the circulation of people on the side of the river *Córrego da Providencia* and it decreased the permeable areas of the city.

The city was already receiving many manufacturing industries. There were sixteen farms of sugar-cane in 1852, which provided around thirty sugar plants until 1862. The coffee that until the 1850s didn't have much value in the region started to conquer space in the 1870s. In the beginning, the plantations were divided in small pieces of land; they were based on local consumption in the middle of the land of big producers of sugar-cane.[194]

With time the coffee, and other products, started to be produced and exported, but the awful access until Campinas, where the last point of the railway was, caused the loss of time and goods. Besides that, Araraquara became a strategic point between 1864 and 1870[195] to the Paraguai's War, thus, the improvement of mobility started to be important to the region.

Therefore, after the *Companhia Paulista de Estrada de Ferro* rose the hypothesis of extension of the railway, the Municipal Council of Araraquara asked to let the city be part of this prolongation. However, in 1876 the rail got until Rio Claro and stopped there, so in 1878 was made another request to the Imperial Government, the representatives were Marques de São Vicente, Dr. Franscisco de Assis Vieira Bueno and the Counselor Antônio Manuel de Campos Melo.[196]

There were many different people interested in the development of the transport infrastructure, which generated many discussions about its design, and because of that the *Cia. Paulista* gave up from this work. In 1880 the Government launched a public notice to select someone to build the new way. The project accepted was made by the engineers Adolpho Augusto Pinto, Luis Pinto and Benedito Antonio da Silva. The investment came from Conde do Pinhal, from São Carlos, where the railway arrived first, in 1884, to get to Araraquara one year later, in January 1885.[197]

[193] LANÇA, João Felipe de Almeida, p. 34;
[194] BARCELLONE, Wilson Lopes Christensen, p. 26;
[195] TÁCITO, Bruna Stéphanie, p. 17;
[196] LANÇA, João Felipe de Almeida, p. 35;
[197] *Idem*;

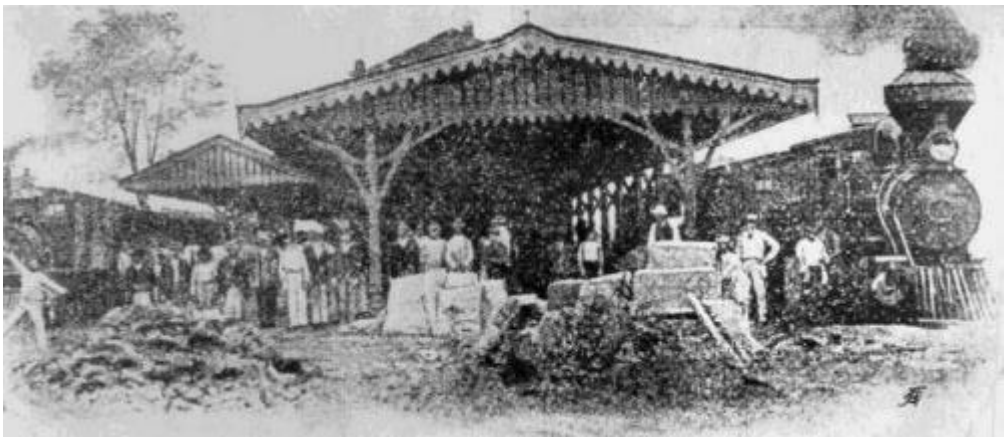

Image 40 – Photo of the Station from 1910. Source: http://www.estacoesferroviarias.com.br/a/fotos/araraq_efrc.jpg (2015)

Getting the existing urban center until that moment as referential, the station was located on the opposite side of the river *Córrego da Servidão*. The new infrastructure attracted more coffee producers and increased the importance of the city, which got the district status in February 6, 1889.

New concerns about the urban plan emerged, the public spaces were rearranged. Normally the works were made by immigrants. As already said in this report, they used to bring some techniques from their countries. One good example used in the urban reforms is the "petit-pavet"[198], it is a kind of sidewalk paving made manually with small rocks. It started to be used in the 20s by Portuguese and Italian people. In Brazil this paving is called "pedra portuguesa".

> *"Mas eis-me deante do calçamento das duas praças. Depois da arborização é o que mais me attráe a atenção. Trata-se do conhecido mosaico portuguez, semelhante ao que tem sido ensaiado no Rio e em S. Paulo e reproducção do que existe em maior profusão nas ruas e largos de Lisboa. Consiste na combinação de fragmentos de granito branco, negro e rosa, formando figuras geométricas. Mas aqui as figuras não têm a monotonia que as caracteriza nos calçamentos semelhantes; são variadas e bizarras em suas linhas, apresentando as mais originaes combinações. Não preciso acrescentar que esse trabalho é de operários portuguezes, especialmente contractados pela Prefeitura, que, dispensando intermediários e não tendo afilhados a proteger, obtem por preço mínimo esse embellezamento das vias publicas. As praças de Santa Cruz e*

[198] VARGAS, Cláudia Regina. *As várias faces da cidade: Bento de Abreu e a modernização de Araraquara (1908-1916),* Franca, UNESP/2000, p. 26;

Municipal têm calçamento identico, embora mais simples nos respectivos desenhos"[199]

The presence of foreigners as a workforce grew after 1888, the year of the abolition of slavery, and the worries about the sanitation too. Two epidemic diseases invaded the city in sequence. First was the smallpox in 1890, which made the head office of the district be moved to Américo Brasiliense, a city next to Araraquara, then, in 1895, started the yellow fever that caused the closure of many markets[200]. The government planted many eucalyptus trees to try to renew the air of the city to reduce the epidemics, but even with this action, and some others to clean the city, many inhabitants ran away.

Thus, coffee producers invested in infrastructures to preserve their profits and make the life better in Araraquara. In 1902[201], another "Código de Posturas" was created, which had many influences from Paris after Haussmann started his new urban concepts. Some of its rules were:

- Streets with minimum width of 16m;
- Sidewalk of 1,65m, covered with stones or cement, able to drain the rain water;
- "Largos" and squares needed to have trees along the faces that meet the public routes;
- All intersections of streets and avenues should have trees;
- It was prohibited stop pack animals in front of houses and stores;
- Lampposts should be of iron or hardwood, and have the shape of a polygon of eight sides or rounded and painted;
- Dairy cattle should undergo tests before gets to the population.

[199]Citation of MAGALHÃES, Couto, from "Impressões de Araraquara". IN: CINTRA, Assis. Araraquara (o município, a cidade e o povo: Monographia Illustrada de Araraquara. Casa Duprat e Casa Mayença; São Paulo/1928, p. 72, used by Carlos Américo Pacheco, p. 58; But here I am in front of the paving of two squares. After the trees, they are the second thing that attracts my attention. It's the well-known Portuguese mosaic, similar as the one used in Rio and S. Paulo and a reproduction of what exists in high scale on the streets and "largos" of Lisbon. It consists in the combination between pieces of white, black and rose granite, to form a geometric image. But here the images don't have the same monotony; the drawings are diverse and strange, presenting the most original combinations. I don't need to add that the work is made by Portuguese, in majority hide by the municipality, what, without no intermediaries and protected people, got the beautification of the streets with low prices. The Santa Cruz and Municipal squares have the same paving, but with simple drawings.

[200] *Idem*, 96;

[201] TÁCITO, Bruna Stéphanie, p. 22-24;

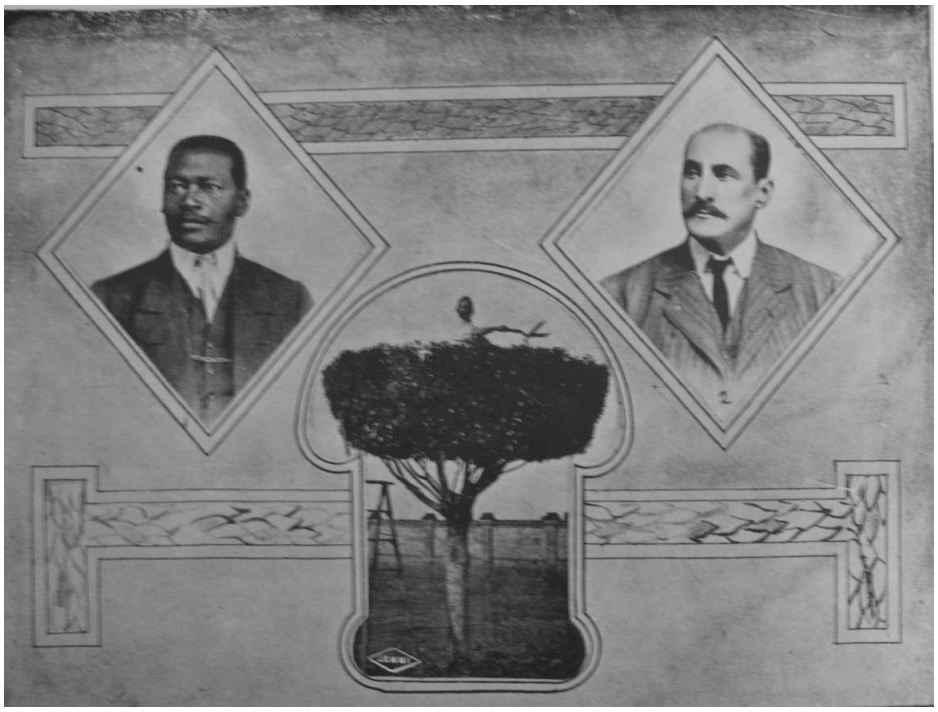

Image 41 – On the left side there is Clement Innocencio Alves, public cleaning Manager; On the right side is Virgílio Correa de Lemos, cemeteries management; In the center there is a common tree used in the city, the *fícus benjamim, or finnis benjamim,* and on it there is Theodoro Papa, caretaker of the forestation. Source: LANÇA, João Felipe de Almeida, p. 40.

To give more support to the population was built, in 1902[202], the first hospital, *Santa Casa de Araraquara*. But the investments were not made only to the health field, since then, many schools were constructed to receive the sons of the elite. The first scholar group was built by the engineer Victor de Lima on an area donated by Colonel Joaquim Duarte Pingo Ferraz. The building was completed in 1898, but it was inaugurated only in June 06, 1903.

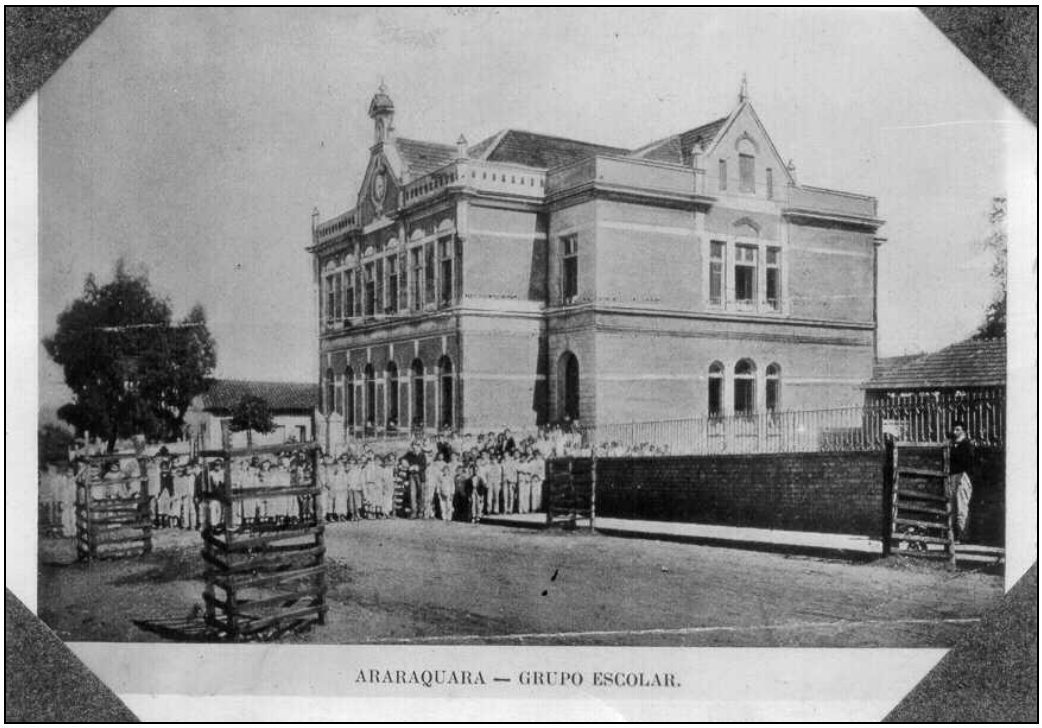

Image 42 – First school, 1903. Soucer: CD-ROM "Araraquara-100 anos de fotografia", Second edition, collected by the researchers of UNESP/Bauru.

[202] PACHECO, Carlos Américo, p. 96;

Since then, many urban improvements were made: the electric energy was installed in 1907 by Ernesto Dias de Castro and José Candido e Souza[203]; in 1906 the eucalyptus planted during the epidemics period in the city were taken out; in 1912 many trees started to be planted, the railway station received them in 1915[204]; In 1913 the *Araraquara College* were created; then two female colleges were created, *Colégio Santo André* in 1916 and *Colégio Progresso* in 1924[205].

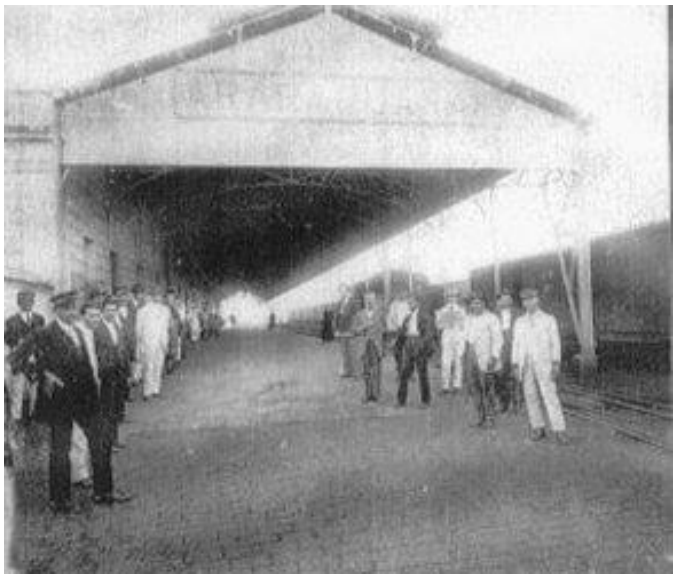

Image 43 – Railway station in 1916 after the rebuild. Source:http://www.estacoesferroviarias.com.br/a/araraquara.htm (2015)

The progress increased the population number and the circulation in the city became a new concern. The railway promoted the emergence of many working-class neighborhoods on the other side of the rails, where the city didn't take place yet, so some new accesses should be done. In 1909 a tunnel under the rails and some bridges to connect the city to Vila Xavier, a neighborhood next to the railway were built; It was in full development provided by many warehouses and some workshops from the station. The workshops started to build wagons of passengers and goods in 1910[206].

Image 44 – Viaduct "Leonardo Barbieri", photo from 1965. It connects Vila Xavier to downtown. Source: VALE, Ana Rute, p. 118.

[203] VARGAS, Cláudia Regina, p. 94;
[204] LANÇA, João Felipe de Almeida, p. 38;
[205] VARGAS, Cláudia Regina, p. 94;
[206] BARCELLONE, Wilson Lopes Christensen, p. 32;

Image 45 – Photos took on 2009 of the working-class neighbor. Source: BARCELLONE, Wilson Lopes Christenses, 2009, p. 29.

In 1917[207], the Headmaster of the State Service, Arthur Neiva, mentioned that Araraquara should be seen as an example of sanitation and, because of the *Azylo Mendicidade* created to take people out of the streets, which made the city has a pleasant aspect, the town should be seen as a good example of help to the needy too.

Bento de Abreu was the one who implanted some of Haussmann's ideas in Araraquara, as the straight lines and corners. Abreu was a very important politic from the region, and he became president of the city.

> *"Araraquara, como as cidades antigas do interior, conservava o cunho da velha architectura de cidade colonial, com suas ruas sujas, lamacentas e pessimamente illuminadas, de casas baixas e insalubres; transformou inteiramente, como por encanto, o seu aspecto de velha cidade colonial em um importante centro de habitações modernas e hygienicas, digna sob todo o ponto de vista do nosso progressivo Estado: e, esta obra gigantesca, verdadeiro encanto, representa o fructo grandioso d'um labor incessante, no qual foi dispendida a mais formidável energia, pela sua digna administração que, obedecendo a um plano mui bem lançado e enveredando pela senda de grandes melhoramentos, apresenta-nos hoje a cidade moderna e cheia de belleza tal qual nos depara. (...) Hoje, como acontece com muitas cidades européas, o primeiro golpe de*

[207] VARGAS, Cláudia Regina, p. 77/78;

> *vista que o recem-chegado lança em Araraquara, desperta uma duradoura e agradável impressão de belleza"*[208]

The European influence can be seen in the changes made at *Praça Matriz* too, one of the areas which received the biggest treatment and became a point of trade. Its garden had all the eucalyptus taken out and it was installed electric illumination and the new paving. Around the square were built many buildings like printers, newspaper essays, and pharmacies, shops of tissues, beverages, perfumes and confectioneries.[209]

A good example of the European influence on the architecture of the city is the Municipal Theater, built in 1914[210], designed by the architect Alexandre de Albuquerque, inspired on the French prototype in its dimensions, materials and decoration.

> *"(...) dirigi minhas vistas para os estylos classicos, não vacilando em escolher a Renascença francesa, que a meu ver é o estylo typico, para os edifícios destinados a theatro. Não cingi-me, porém, ao rigor do clássico, indo procurar no mourisco uma variação para as cupolas e modernisando o estylo classico por motivos puramente econômicos quando applicado às fachadas laterais e posteriores.(...) Sem ambicionar uma comparação com o grande Garnier, ouso entretanto lembrar que foi esse o efeito, assim obtido no seu monumental projecto da Opera de Paris, um dos elementos que induziram a ser considerada aquella obra uma verdadeira conquista na architectura theatral".*[211]

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[208] Citation of PREFEITURA MUNICIPAL DE ARARAQUARA, from *Noções elementares de Geographia e Cosmographia: Monographia do Município de Araraquara*. Araraquara: Typ. Artistica/1919, w. p., used by Cláudia Regina Vargas, p. 82; Araraquara, as an old city from hinterland, preserved the old architecture from the colonial city, with its dirties streets, muddy and poorly lit, with low and unhealthy houses; it fully transformed, as if by magic, its aspect from an old colonial city to an important modern and hygienic dwellings, which fits in all points of view in our progressive State: and, this huge work, a real beauty, represents the big result of an constant labor, in which was spent lot of energy by its decent management, who obeyed a plan well launched and followed the path of big improvements, and it presents today the modern city, full of beauty that can be seen (…) Today, like happened with many European cities, the first look that the newcomer has over Araraquara raise a long and pleasant impression of beauty.

[209] VARGAS, Cláudia Regina, p. 93;

[210] *Idem*, p. 99;

[211] *Idem*, Cit. p. 99/100; (...) I focused on the classic styles, without any fear of choosing the French Renascence, which in my point of view is the distinctive style to the buildings designed as a theater. I didn't stuck myself in the classic way, I search for the Moorish as a diversification to the dome and as a way to make the classic more modern, with economic reasons when it was applied on the side and rear facades. (…) Without the ambition of a comparison with the great Garnier, I dare to remind that this was the effect that he got in his monumental design of Opera of Paris, one of the elements in that work that have to be considered as a real achievement in architecture for theaters.

Since then, around the 40s, if the districts of Américo Brasiliense, Bueno de Andrade, Galvão Paixoto, Motuca and Santa Lúcia were taken into account, Araraquara had 70.000[212] inhabitants. In the period of the improvement of the roads, the Av. Padre Francico Salles Culturato gave access to the highway Washington Luís. This highway connected the city to the capital of the State, it was built since 1948 until 1949, and it was paved between 1963 and 1965.[213]

During the same period more working class neighborhoods were built nearby the station to help its development. The new population provided the arrival of new markets of basic products to serve it, one of them was created specific to the workers of the railway. Besides that, in April 12, 1950[214], a place for the recreation of the workers of the railway called *Associação Ferroviária de Esportes*[215] (AFE) was created, which gave birth to the soccer team of the city.

Image 46 – Market built by EFA where today works the Education Secretary of Araraquara. Source: BARCELLONE, Wilson Lopes Christenses, 2009, p. 30.

Image 47 - Aerial view of the AFE Stadium. Source: BARCELLONE, Wilson Lopes Christenses, 2009, p. 31.

[212] TÁCITO, Bruna Stéphanie, p. 25;
[213] VALE, Ana Rute. *Expansão Urbana e Plurifuncionalidade do Espaço Urbano Periurbano do Município de Araraquara*. Doctoral thesis from the Instituto de Geociência e Ciência Exatas, UNESP, Rio Claro/2005, p. 117;
[214] http://www.ferroviariasa.com.br/historia-do-clube (2015)
[215] BARCELLONE, Wilson Lopes Christensen, p. 28/29;

In the 50s the mobility in the city was improved. The mayor Rômulo Lupo[216] knew about an electric urban transport that existed in Vicenza and Piacenza in Italy, so he decided to implant this infrastructure in Araraquara. A private company got a concession of fifty years by the law nº 713 from December 4, 1958, to work on that. The *Companhia Tróleibus de Araraquara* (CTA) started to work a year later, in December 27. It used national vehicles with chassis and bodywork from *Grassi* and the engine from *Villares*. It expanded during the years, but in the 90s, the energy prices were high and the company suspended the use of this transport in 1999. A year later there was a try to make it work again, but it didn't succeed.[217]

Image 48 – First electric bus made in Brazil. It was used since 1959 until 1998. Source: http://www.ctaonline.com.br/index.php/2013-07-10-13-41-40/150-troleibus (2015)

As already saw, in the 50s happened an economy inversion. As a result of that, many neighborhoods emerged. Between 1962 and 1976 started to be created the Industrial Districts that caused an unorganized expansion of the city. Many popular neighborhoods appeared in different sides of the town. The land profiteering accelerated the division of the areas in the 70s. The government was obliged to interfere in that exacerbated growth; the public expenses of urban infrastructure were out of control. In this way, the government imposed that the new allotments would be accepted only if the owner gives the entire urban infrastructure necessary.[218]

Until the 80s the demographic growth was following the space expansion, but after the 90s that was inverted, which left many empty spaces along the urban grid. The action adopted by the government was to reduce the number of approvals of projects. Meanwhile, the manufacturer of planes, the company *EMBRAER*, arrived to Araraquara and improved the land use. Besides that, many hotels, high standard closed neighborhoods, hypermarkets and a remodeling Shopping Mall were built.

[216] It wasn't found the exact way that Lupo knew about the electric buss in Italy.
[217] http://www.ctaonline.com.br/index.php/2013-07-10-13-41-01 (2015)
[218] VALE, Ana Rute, p. 119/120;

Thus, the railway is the first industrial infrastructure that changed the urban ecosystem of Araraquara, but was not the only one. After the railway attracted other industries, these industries attracted more infrastructures and like that the city was developed as a big region pole. The relationship between the urban, the industrial development and the railway is so strong that in 2014, the company Randon[219], producer of rail wagon and semitrailer for sugar-cane, announced that it would create 2 thousand jobs and invests R$ 500 million to install an industry in Araraquara, because of its strategic location and all the infrastructure that already exists. So, from now own, the highways and the railways are supposed to promote another period of industrialization in the city.

2.3 The French Cities as another Example of Relationship Between Railways and Urban Space in comparison with Araraquara

"L'industrie n'a pas été à l'origine de notre urbanization et c'est l'échange qui a servi de détonateur."[220]

Almost for all over Europe the urban agglomeration began before the industrialization, so at this point they are similar with the cities from *Estrada de Ferro Araraquarase*. In both cases the industrialization attracted immigrants from the rural area. In France, the demographic explosion started around 1830[221], which caused changes of space organization, economy and social life. The city became a place of richness and goods circulation. After a brief introduction, some examples of recent influences of the railway in the cities of Lille, Lyon and Marseille will be presented. As Araraquara, these French cities are regional capitals, and the analyses made on them can't omit the influence of the capital of the country, Paris.

Like happened in the Brazilian cities, the sanitation became a concern after the population started to increase. Paris and Marseille were devastated by cholera epidemic in 1835, so as an improvement of the medieval design, in 1840, many discussions and interventions made by Haussmann started in Paris. Lyon and Marseille were influenced by the new ideas of modernization and sanitation between 1860 and 1880, before it got to Araraquara. The responsible for that in Lyon was Vaisse, Councillor of State[222], and in Marseille was the engineer Montricher.[223]

A little bit before these urban grid reconfigurations, between 1850 and 1860, Lyon, Lille and Paris started to create peripheral annexes, so some public transportations were inserted to the urban

[219] Kappa Magazine, edition 91, nº 1, August 19, 2014, p. 29;
[220] BACKOUCHE, Isabelle. *L'histoire urbaine en France. Nouvel objet, nouvelles approaches.* Article from "Revue d'histoire urbaine, vol. 32, nº 1/2003, p. 8;
[221] AGULHON, Maurice. *Histoire de la France urbaine, tombe 4: La Ville de l'âge industriel.* Relié, May 1º, 1983, p. 19;
[222]http://www.archives-lyon.fr/archives/sections/fr/histoire_de_lyon/les_maires/de_1852_a_1905/claude-marius_vaisse/ (2015)
[223] AGULHON, Maurice, p. 95/99;

life. In the meanwhile, the urban development of Paris had the biggest concentration of population, it increased from 35% in 1856 to 50% in 1931, Lyon, Lille and Marseille had their number increased too, caused by their regional importance.[224]

The railway was part of this frame, because as already saw, between 1850 and 1860, it improved its potential by continuing the territory expropriations that it started in 1841. According to the French historian Agulhon, the expiration of the railways didn't design an industry development in a conscious way like it happened in Araraquara. But even like that, he showed, using the words of the architect Hector Horeau, that the relationship between the city and the mobility was a big concern, what diverges from the railroads of São Paulo, which were concerned with the transportation of goods without take a look on the consequences of its installation in the urban grid.

> *"(...) prévoit developer le système circulatoire par une junction ferroviaire et la ville avec sa banlieue, et evisage des procédues permettant de geler à l'avance le terrains urbanisables en surveillant."*[225]

As result of this concern, since 1898 the design of the metropolitan mobility was a responsibility of the government. This action is conducive to the idea of avoiding the monopole by private power. Thus, the public-private worked together. In Paris the private group that gave support to the railway development was the group of *Schneider – Le Creusot*, owners of a mining of steel and iron. In Lille and Lyon, around the same period (1900), the railroad developed through secondary lines to connect the periphery of the cities to their center, they were financed by private capital, and a net of bus was created to complete their course.[226]

Between 1900 and 1910 the first enterprises of mobility appeared, so nearby the First World War it was difficult to find a city without a public transport well consolidated capable to link at least two cities from the same region. The concern about the intermodal system was so important that an architect called Eugène Hérnard[227] created an idea in which all the means of transportation were connected and divided by different levels. One layer would be to cars and pedestrians, the second one would be to tramways, a third one to infrastructure and the last one to transport of goods. The idea became an utopia, without any possibility of installation.[228]

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[224] AGULHON, Maurice, p. 27/34;
[225] Citation of the French architect Hector Horeau used by Maurice Agulhon, p. 176;
[226] AGULHON, Maurice, p. 130/351;
[227] Eugène Hérnard was the first French urbanist, who studied the urban changes of Paris. He wrote the book "Parisino Etudes sur les transformaciones de Paris" and the book "Les villes de l'avenir" in the beginning of the 20th century;
[228] AGULHON, Maurice, p. 351/179;

> *"Avant que l'urbanisation ne prenne l'apleur que l'on sait, il fut généralement facile de fixer les gares au coeur des agglomérations."*[229]

As can be seen, the stations were planned to be built in the middle of the city and not around in some rural property as normally happened in the west region of São Paulo. Anyway, after 1920 the railway in France started to decline after the arrival of the highway too. Their tramways weren't immediately installed as happened in German.[230] So the neglect got the railroad and gave birth to the *Société Nacionale des Chemins de Fer Français* (SNCF) in January first, 1938.[231]

> *"Le chemin de fer arrive de mieux en mieux à assurer le porte à porte pour les marchandises, par le développment d'embrachements particulirs (il y en après de 10.500) par l'utilisation de containers, des semiremorques et sourtout de véhicules «kangourous» aceminables par route"*[232]

The French railway was going through the same way as the Brazilian one. Between the Second World War and 1955, the trolleybus was substituted by the urban bus. However, like in Araraquara, the French railroad received some improvements, but in a national scale, and not in a regional scale like the company *Estrada de Ferro Araraquarese* tried to do. Before the raise of the train's speed, the French used cybernetic systems to manage the transport of goods. These technologies were being used by United States and Japan.[233] Probably, in Brazil, caused by its size, a national politic would be more complex, but probably if the national government had stimulated the improvement of new technologies, each State would had invested in research and technologies to become a little bit free from the external market, and they would not abandoned the railway as they did, the Brazilian net could had a different history.

Besides the urban bus, the number of cars increased after the peripheral growth too, but some acts were made to minimize these automobile progressions, for example, in Paris the *Réseau Express Regional* (R. E. R.) was built to connect the capital to its surrounding areas, which was the most practical way of mobility for the inhabitants. The *Institut d'aménagement et d'urbanism de Paris* believed that this kind of regional transport would be the one able to develop more,[234] it would be improved fast and with the construction of more integrated network. That option based on

[229] SCHINETZLER, Jacques. *Le chemin de fer et l'espace français.* Article from Revue de géographie de Lyon, vol. 42, nº 1, 1967, p. 82;
[230] *Idem*, p. 82/83;
[231] *Idem*, p. 82/83;
[232] *Idem*, p. 82;
[233] *Idem*, p. 86/91-92;
[234] *Idem*, p. 99;

the planning of the mobility in a regional scale was the one used in Brazil, but the country didn't thought about the integration of the rail station with the other kind of motilities for passengers, what let the train focused only on the transportation of goods without making part of the city's life.

Below some actions to improve the railway in the regional capitals already mentioned will be described. These examples will make easier to understand the differences between the French cities and the case of study of this thesis. They will be able to put in evidence the influence of the national politic on the regional management, and how the railway was linked to the urban development. The examples were chosen from the north to the south of France, which means that the three cities are disposed like: Marseille is on the south, Lyon is on the center, and Lille on the north.

- **MARSEILLE**

The Saint-Charles station is the third most important province station after Lyon-Part-Dieu and Lille-Flandres station. It was built in the center of the city because of the industrial potential created by the port. Since the 70s it got a line of the subway, but what really promoted its development was the arrival of TGV in 1982. In 1995 the national government got interested on the rehabilitation of its 300 ha.[235]

Like this, in an area of a popular neighborhood with markets, tertiary activities, military equipment producers, school equipment producers and some enterprises, it turned to be an area with other kinds of tertiary activities and hostels. Besides that, the Honnorant market was reformed and got pharmacies, restaurants, press and a parking lot to the vehicles that used the highway A7, an important infrastructure to improve the intermodal value of the station.[236]

As a meeting point between the subway, the train and the highway, Saint-Charles had a project of rehabilitation and prolongation based on an intermodal system. This project was launched in 2007 and called AREP. Jean-Marie Duthilleul was the architect responsible, he worked for SNCF. In parallel to his project, there was an urban planning being done to turn the railway station in something more than an infrastructure building; it should've be a place with different uses.[237]

Thus, in an urban scale, the modifications were based on the management of the streets that provided for the station an entrance, the creation of public spaces, the rehabilitation of the station historic building, the installation of the first tramway and the reintegration of some old places that

[235] POPSU (Plateforme d'observation des projets et des stratégies urbaines) Europe. *Gares TGV et dynamiques de renouvellement urbain : Barcelone, Marseille, Turin.* Documento réalisé par Jean-Baptite Marie, Chargé d'études/2009, p. 19-22;
[236] *Idem*, p. 21-22;
[237] *Idem*, p. 22-23;

used to produce tobacco to the city as a cultural pole. All these changes were financed by public and private institutions, like:[238]

- RFF – Réseau Ferré de France (responsible for the infrastructure);
- SNFC - Société Nacionale des Chemins de Fer Français (as the main operator, it was responsible to restore the station building);
- Nacional Government (co-financing);
- Europe (co-financing);
- Départment des Bouches-du-Rhône (responsible for the highways);
- Communauté Urbaine Marseille-Provence-Métropole (responsible for the highways and the public transport management);

- **LYON**

The Part-Dieu station is located in the center of a neighborhood built in 1970, which has the same name of the train station. Part-Dieu station substituted an old one responsible only for goods screening. This area was the first business center of the Ile de France, which made the station an important multimodal center that included bus, tramway, three lines of trolleybus and one line of subway.[239]

The two ideas: let the neighborhood grow naturally and turn it in a place based on mobility, were conflictive. To link both of them, the public sector, Grand Lyon, stimulated private investors to develop the area and it put the SNCF as the principal actor, but all the rebuilding projects should've be accepted by the collective to develop the tertiary sector and improve the neighborhood.[240] In this way, the Part-Dieu quarter attracted many international enterprises and started to be the principal station of province of SNCF.

While the projects were being built, the neighborhood received many new functions like some services to make the area have life during the night and some accommodations. Like this, the distribution of the different kind of buildings were well divided, the offices and services were located around the station and the rails, while the new residences surrounded these buildings in the direction of the historic center.[241] This kind of configuration is similar with the one created in Araraquara, where the city started to grow in the sense of the railway that was being surrounded of new services and industries.

[238] POPSU *Barcelone, Marseille, Turin,* p. 23-24;
[239] POPSU (Plateforme d'observation des projets et des stratégies urbaines) Europe. *Gares TGV et dynamiques de renouvellement urbain : Lyon, Lille, Rotterdam.* Documento réalisé par Jean-Baptite Marie, Chargé d'études/2009, p. 18;
[240] *Idem,* p. 20;
[241] *Idem,* p. 23;

The paving roads received some attention too, to integrate the station building to the city. The Garibaldi Street, as an example of Haussmann's influence, became a boulevard to fit in the urban grid in a harmonic way. The presence of cars means the presence of parking lots, so around the station were built some of them to link the two kinds of mobility.[242]

- **LILLE**

Until the 60s, Lille was an industrial capital, but in thirty years it suffered a decline and the most important characteristic of the city turned to be its localization as a connection point to Brussels, Paris and London. As an international link, Lille connects France to England and Belgium. Concerning to this fact, its rebuilding had three strategic elements:[243]

- A tunnel under the English Channel, which was inaugurated in 1994 after an alliance between England and France;
- *TGV Nord-Europe,* which started to work right after the tunnel were inaugurated and became the central point of the station;
- "Transfrontalier" – an initiative to promote an alliance between France and Belgium.

The Lille-Flandres station wasn't able to support the TGV, and to expand the old station wasn't possible because it was next to the Vauban fortification built in the 17th century (later the fortification lost its feature as heritage and became a new neighborhood). So, another station was built in the center of the city and its aim was to combine services as trade, institutional buildings and residences.[244]

The architect responsible for the new station build was Claude Vasconi. Because of some financing problems, he was obliged to adapt the project of the station. Even without being part of the goal, the station gave a new value to the historic center of Lille, and as a result the city was known as the capital of culture in 2004.[245]

The station was expanded by a project from Rem Koolhaas, which made it be able to have many services as the *Superior School of Lille*, an room of exhibitions (the "Aéronef"), and the *Maison de la ville et de l'architecture*. In the end the railway gave birth to a new neighborhood as a peripheral boulevard constituted by offices and residences. Another important change was the rebuilding of the Faidherbe Street, known today as Rambla, which connects the historical center to

[242] POPSU, *Lyon, Lille, Rotterdam,* p. 24;
[243] *Idem,* p. 13/11;
[244] *Idem,* p. 12;
[245] *Idem,* p. 12-13;

the station. This link was important to the *Lille Grand Palais*, designed by Rem Koolhas as a building with three functions: congress, exhibition and a concert hall.[246]

Thus, the new station, Euralille, like in Marseille and Lyon, got a line of subway, it was connected to a highway and it had a stop of the tramway. These motilities were created in the space between the two stations, where many trades, residences and public buildings were constructed following the design made by Jean Nouvel.[247]

All the changes were financed by public and private institutions as could be seen in the other two examples:[248]

- Pierre Mauroy – Président de la Communauté Urbaine
- Jean-Paul Baïetto – director of SEM Euralille;
- Jean-Louis Subileau – successor of the director of SEM Euralille;
- Rem Koolhaas – urban planner;
- Comité Grand Lille (Lille-Metrópole) – incorporated by civilians with interest to promote the international development of the city;
- SNFC - Société Nacionale des Chemins de Fer Français (responsible for part of the funding).

In all cases the public and the private worked together, they were concerned with an intermodal system, the insertion of the high speed train and a multifunctional building able to interact with the urban life. To establish a parallel between these examples and the case of study of this research is to observe that at a certain point in history, when the railroad went into decline, it became clear the difference of management. French rail networks were more prepared to continue its development, not only because of the technology that they were able to produce, but because of their different way of planning. The *Estrada de Ferro Araraquarese* tried to make new investments and implant new technologies, but everything depended on the international market and the municipality didn't stop to see the station as an independent building, so it is not well integrated to the urban grid. The only function that the station of Araraquara has is a museum about the railway, so even with an intermodal potential, the population doesn't use it in their daily life.

[246] POPSU, *Lyon, Lille, Rotterdam,* p. 14-15;
[247] *Idem,* p. 16;
[248] *Idem*;

CHAPTER III. The Recovery of a Memory

SUMMARY IN FRENCH

Ce chapitre présente les notions de patrimoine industriel et comment ce dernier soit géré au niveau national, ainsi qu'international. On a aussi montré comment le chemin de fer est considéré comme patrimoine industriel et la manière avec laquelle il est classé. Alors, on a décrit le développement de ce champ d'étude qui est le patrimoine industriel ainsi que la notion de patrimoine urbain où l'industrie est partie en laissant derrière une voie ferroviaire qui l'a beaucoup influencé tout au long des longues années qui se sont écoulées.

Pour montrer l'influence de l'infrastructure d'*Estrada de Ferro Araraquarense* au sein de la ville d'Araraquara et pour mettre l'accent sur son importance comme un rare patrimoine industriel, la deuxième partie de ce chapitre va se porter sur le développement industriel de la ville. Cet étude historique ainsi que le concept d'évaluation et de gestion de patrimoine industriel qu'on déjà vue, nous a aidé à élaborer une proposition d'une mise en valeur de chemin de fer.

Dans ce chapitre on voit clairement l'importance de la connaissance de l'objet d'étude qui est un patrimoine urban et industriel. C'est pour cela et afin de montrer la pertinence de cette thèse, qui l'inventaire a été présenté comme une méthode efficace pour commencer la collecte des donnés et entreprendre le developpement du chemin de fer. L'exemple de catalogage Français est une hypothése présentée par ce travail car ce pays a été le pionnier dans le développement de ses dossiers de patrimoine industriel.

3.1 Railway and Heritage: a National and International Perspectives

The railway arrived in Araraquara in the end of 19th century, during the pre-industrial period, when the idea of "urban heritage" was raised as a concern about the layering caused by the modernization of the cities. Thus, many discussions turned around this subject to establish a way to preserve and conserve the old urban centers without stopping the development of the cities.

Araraquara, as already mentioned, had influence from the urbanization of Paris. Haussmann was one of the urban designers that started to create a way to preserve some features of the past. He tried to preserve the most important monuments of the city, but at the same time, the medieval urban grid was replaced by big avenues. In Brazil the cities of the west of State of São Paulo weren't as old as in France; they were created in the 19th century, so, the Haussmannian way of preservation measured up with the nationalist policy imposed by Getúlio Vargas.

The Athens Charter created in 1931 was based on the same principal; it focused more on the building as an isolate monument. It established rules of how the buildings should've be conserved and restored; even though their surroundings couldn't conceal the importance and the features of the constructions. All the issues of the charter were addressed for all nations as a responsibility of all countries to manage documental archives and to make the preservation knowledge be part of the educational system.

Few years later, in 1933, the urbanism became more rational and functional, so the CIAM (Congrès International d'Architecture Moderne) reviewed the first Athens Charter. From that moment on, the city was considered as a whole complex that must be preserved. One of the first things taken under consideration to preserve a building was the sanitation, besides that, the changes of the urban grid around them should preserve at least one example of the old design. The real value of the construction could be given only after some analyses and at the same time the modernization of the urban drawing started to receive more attention to be part of the revitalization.

The concept of industrial heritage didn't take a long time to appear after the concern about the cities. It emerged from an article written by Michael Rix in 1955[249]. The article was about "industrial archeology", "industrial heritage" was its title and in the end the expression became a new field of study based on the reconstruction of the productions' techniques during the history. But what really highlighted the industries as a heritage was the Venice Charter created in 1964 to improve the Athens Charters.

This third letter included the importance of the reuse of the buildings to be embedded again in to the urban life. So, while the archeology was finding the remains of the industries, the Venice

[249] http://industrial-archaeology.org/aba86.htm (2014)

Charter wanted to do the huge old building alive again as part of the history and of the daily life of the city. The new concept got to its peak around the 60s[250] when two industries of London were destroyed, the *Euston Station* and the *Coal Exchange*, designed by the architect James Bunstone Bunning.

In this way, with the increasing concern about the conservation of the memories of the old city, in 1972[251] the UNESCO World Heritage Convention established some baselines to classify the heritage as a world value.

> *"The mandate of the World Heritage Center is not about freezing heritage, but to integrate heritage conservation management and preservation with the overall development process and to promote a better understanding and tolerance of cultural diversity."*[252]

After that, in 1978, during the III International Conference on the Conservation of the Industrial Heritage, which happened in Sweden, the TICCIH (The International Committee for Conservation of the Industrial Heritage) was created; it is a specialized institution on discussions about industrial heritage.

Until that moment, as can be seen, the concern about this kind of heritage was being improved, but it was only in 1999[253] that the "Industrial Heritage" started to be considered by the World Heritage Center and ICOMOS (International Council of Monuments and Sites) as a way of heritage classification. The structure to catalogue this new kind of legacy was divided in ten categories:

- Extractive Industries (e. g. Ore- or Gold-mining)
- Bulk Products Industries (e. g. Primary Metal Industries)
- Manufacturing Industries (e. g. Machine Manufacture)
- Utilities (e. g. Water Supply, Electricity)
- Power Sources and Prime Movers (e. g. Water wheels, Steam turbines)
- Transportation (e. g. Railroads, Cannels, Harbor)
- Communication (e. g. Radio, Telephone)
- Bridges, Trestles, Aqueducts

[250] COSTA, Ana Paula Mota de Bitencourt da. *O valor universal excepcional e a lista o patrimônio mundial: o caso dos bens ferroviários.* Article from the II CONINTER (Congresso Internacional Interdisciplinar e Sociais de Humanidades). Belo Horizonte/2013, p.02;
[251] FALSER, Michael, *Industrial Heritage Analisys*, Published by http://en.unesco.org/, Asia-Pacific Region/2001, p. 04;
[252] *Idem*, p. 05;
[253] *Idem*, p. 09;

- Building Technology (Roof systems, Fenestration)
- Specialized Structures / Objects (e. g. Dams, Tunnels, Hydraulic works)

It was in this same period that the industries value received attention in Brazil, only forty years after the first actions related to heritage value in the country, what was marked by the creation of SPHAN (Serviço do Patrimônio Histórico Artístico Nacional) in November 30, 1937[254]. The national interests on heritage was, as already mentioned, to create a national identity to enhance the idea of a Brazilian nation, so in the beginning the valuing was given to everything related to colonial and baroque art.

The politics of art and cultural protection caused the creation of many secretariats to preserve monuments in several States of the country. These entities were responsible to manage the legacy of its own State, before it became a national interest; the first state to have that was Minas Gerais. In the State of São Paulo the entity responsible for the State heritage conservation is the CONDEPHAAT (Conselho da Defesa do Patrimônio Histórico, Arqueológico, Artístico e Turístico), created in 1968[255].

In 1946, because of the destruction of many collections caused by the fast urbanization, the national service, SPHAN, became a board, what changed the abbreviation to DPHAN. The intention was to change the mentality about the national conservation. To improve even more this idea, the entity got the status of Institute in the 70s, and until now its name is IPHAN. This promotion made the heritage field gets bigger, that means that besides the colonial and the baroque art, everything from the Empire or the Republic periods gained value, and the monument stopped to be considered as an isolate object and started to be seen as a complex that could be a neighborhood or even an entire city. These ideas are able to put in evidence the influence that the international concerns had in Brazil, because the country was following the same principals.

More federal institutes were created to take care of the heritage. In 1973[256] was created the PCH (Novos Recursos, Revitalização e Conjuntos e Integração Counitária) to study the conditions of the heritage from the northeast of the country. Later, in June 1º, 1975[257], the first group to preserve the manufacture and technological techniques was created, it is called CNRC (Centro Nacional de Referência Cultura), and it's coordinated by the Federal Government and the Ministry of Industry and Trade. Since then, IPHAN realized that all the organizations created should be unified to be well managed, so the Institution created the "Secretaria do Patrimônio Histórico e

[254] http://portal.iphan.gov.br/ (2014)
[255] *Idem*;
[256] *Idem*;
[257] *Idem*;

Artístico Nacional" in 1979[258]. This worked only in the national level, the institutes of regional level, in each State remained with their own organizations, and with the passing time, some cities started to create their own heritage management. Thus, the Brazilian heritage administration should be understood by levels. The first one is the federal level coordinated by IPHAN, then it's the state level and some cases have the Municipal level. Araraquara has the "Conselho Municipal de Preservação do Patrimônio Histórico, Arquitetônico, Paleontológico, Etnográfico, Arquivístico, Bibliográfico, Artístico, Paisagístico, Cultural e Ambiental de Araraquara" (COMPPHARA) aproved by the municipal law nº 6.055, of October 10, 2003[259].

The railway heritage became a global concern after a research made by Anthony Coulls, the Senior Curator at the National Railway Museum of York since 1988, entitled "Railway a World Heritage Sites", which called the attention of UNESCO. So in 1998 the first railway which was classified as a world heritage was the Semmering Railway from Austria. One year later, another one from India was listed in this classification, the Montanhosa Railway, and after that in 2008, the Rhaetian Railway from Switzerland. They were categorized according to their infrastructure as a monument of engineering, to their management, work techniques, technology or social-economic influences or more than one of them.[260]

In Brazil the railway heritage became a matter of concern between 2000 and 2002, when the RFFSA (Federal Railway Net Limited Company) made a catalogue named "Inventário de Bens Móveis Históricos", which had 14.785 items that today are preserved by some railroad museums, municipalities or entities. After that, in 2007, by the Law 11.483, IPHAN created a specific category to the railways, which resulted in another survey with 6.000 buildings, the "Inventário de Conhecimento do Patrimônio Cultural Ferroviário".[261]

Nevertheless, the buildings were in different state of conservation, so in 2008, IPHAN created the "Coordenação Técnica para o Patrimônio Ferroviário" by Portaria nº 208[262]. It's a coordination group responsible for more detailed discussions about the preservation of the railways. In 2010 was created a law, Portaria nº 407[263], to stablish some standards to preserve the railroads recognized by RFFSA:

> *"Art. 4º São passíveis de inclusão na Lista do Patrimônio Cultural Ferroviário os bens móveis e imóveis oriundos da extinta RFFSA:*

[258] http://portal.iphan.gov.br/ (2014);
[259] http://c-mara-municipal-da-araraquara.jusbrasil.com.br/legislacao/289428/lei-6055-03 (2015)
[260] COSTA, Ana Paula Mota de Bitencourt da, p. 10;
[261] http://portal.iphan.gov.br/ (2014)
[262] *Idem*;
[263] NETO, José Rodrigues Cavalcanti; CARNEIRO, p. 08;

I - Que apresentarem correlação com fatos e contextos históricos ou culturais relevantes, inclusive ciclos econômicos, movimentos e eventos sociais, processos de ocupação e desenvolvimento do País, de seus Estados ou Regiões, bem como com seus agentes sociais marcantes;

II - Portadores de valor artístico, tecnológico ou científico, especialmente aqueles relacionados diretamente com a evolução tecnológica ou com as principais tipologias empregadas no Brasil a partir de meados do século XIX até a década de 1970;

III - Cujo intuito de valoração cultural seja objeto de manifestação individual ou coletiva de pessoa física ou jurídica, pública ou privada, desde que devidamente justificada, podendo ser, inclusive, motivada por seu valor simbólico."[264]

In the list made by IPHAN there are twelve railways from the State of São Paulo. One of them is the Railway Station of São José do Rio Preto, a station considered as "bouches de la brousse" of *Estrada de Ferro Araraquarense* by Monbeig. The process to let this station be recognized as a heritage is under analysis, so it's not a national heritage yet.

Unfortunately, the papers delivered to IPHAN containing the request of São José do Rio Preto are not available. Anyway, even without a comparison between two stations from the same railway, the aim here was to present how the railroad is seen as a heritage in a global context, to make easier the comprehension of the importance of this industrial heritage. Araraquara is just the first city that made part of the partial development of this mobility, so it's just the first case of study to understand the importance of this railroad in the development of an urban and industrial heritage of a large region of the State of São Paulo.

"O objeto reconhecido como bem cultural, por sua vez, deixa de ser tão apenas a malha ferroviária e passa a englobar as demais construções erigidas nos arredores, sejam elas industriais, religiosas, comerciais ou de serviço. O patrimônio

[264] Art. 4 Are eligible for inclusion on the list of Cultural Heritage Rail the movable and immovable property from the defunct RFFSA: I- which presents correlation with facts and relevant historical or cultural contexts, including business cycles, movements and social events, occupation and development processes of the country, of their States or regions, as well as with its striking social workers; II- Carriers of artistic, technological or scientific, especially those directly related with technological developments or with the main typologies employed in Brazil from the mid-nineteenth century until the Decade of 1970; III – Which have the purpose of cultural valuation as object of individual or collective manifestation, physical person or legal entity, whether public or private, duly justified, and can be motivated by his symbolic value. "

ferroviário da humanidade extrapola as linhas ferroviárias, repercutindo em um conjunto mais abrangente que agrega a malha ferroviária à paisagem construída em sua volta, integrando a ação do homem com a natureza circundante." [265]

3.2 Railroad and Araraquara's Industrial Heritage

Araraquara, as almost all the State of São Paulo, had its machinery intended for coffee and sugar-cane production. The first equipment moved by steam arrived in 1880 to São Luiz Farm, a producer of coffee that currently is part of the city of Orlândia. Since then, other farms got new technologies, in 1886 the Chibarro Farm got one, in 1892 Santa Isabel Farm got four and in 1910 the whole region of Araraquara had sixteen machines, fourteen were to the coffee production and two of them were used by the immigrants in other cultures.[266]

In this same period, the installation of different industries and manufactories gave the city a big potential to be the regional capital. The more common industry was the food one; in 1897 the city had three factories of pasta, ten of beer and seventy-two men of trade, what means the inclusion of different producers sectors. A soap factory, for example, created in 1888 by the Italian immigrant João Masiero, created a kind of luxury soap called "Yolanda". This product was exported to many different countries and in 1914 it won the first price in Paris at the "Exposition du Progrés Moderne".[267]

Many Italians made important part of the industrial development in Araraquara. In 1903[268] the Italian Antonio Blundi, who went to Araraquara after eight years of work to the *São Paulo Railway Company* and the *Lidgerwood & Cia*, invented a coffee peeler that were patented by the Scottish industry *Mac Hardy*. Another important immigrant was the Spanish Celso Martinez Carrera, a worker of the *Companhia Estrada de Ferro Araraquara*, who in 1909 opened the *Móveis Carrera* factory. It produced furniture in wood, so to be able to attend the demand he bought many forests from farmers. During the First World War, the steel and iron importation declined, what made their acquisition difficult and increased the use of wood. Carrera invented a wood bed for hospitals that made him famous, because the beds had a special design and until that moment they were produced by iron. However, the product that helped him to be renowned made his failure too.

[265]COSTA, Ana Paula Mota de Bitencourt da. Belo Horizonte/2013, p. 13. The object recognized as cultural, in turn, stops being just the railway and passes to encompass the other constructions erected on its boundaries, which can be religious, commercial, industrial or service buildings. The railroad heritage of humanity extrapolates the railway lines; it results in an over-arching that aggregates the railway to the landscape around, which integrates the action of man with the surrounding nature.
[266] PACHECO, Américo Carlos, p.97/98;
[267] *Idem*, p. 60/71/97/169;
[268] http://www.novomilenio.inf.br/santos/h0300g39i.htm (2015)

He didn't patent the product, but Luíz Líscio, one of his workers, took the rights of the object in 1929. After that he opened a factory in the city of São Paulo, what collapsed his old boss' industry, which even with other products like the customized desk or the window "Metrópoles", couldn't hold on the market.[269]

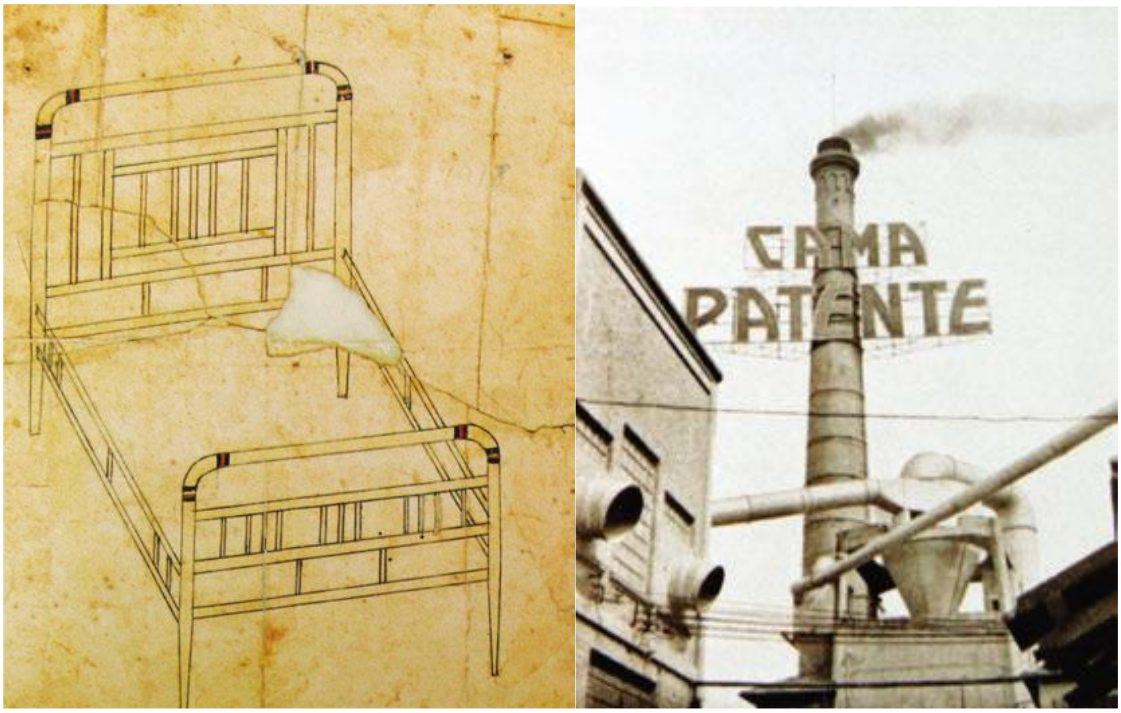

Image 49 – Project of the bed made by Celso Martinez Carrera and the industry created by Luíz Líscio in São Paulo. Source: Kappa Magazine/2014, p. 36;

Between 1910 and 1929[270] of forty-eight demands to install new industries in Araraquara, twenty-seven of them were Italian, only eight were Brazilian and the rest of them were Spanish, Turkish and Polonaise. Among this industrialization some productions became well-known, like a cylinder fabric from an Italian immigrant and the emergence of the pasteurization industry, both of them from 1911. The milk processing industry, part of the pasteurization factory, began by Bento de Abreu Sampaio Vidal, the politician already mentioned, but he made that before starts his public carrier, during the period that he was the owner of the farm "Fazenda Alpes" and Director of Araraquara's Bank.[271]

The first sugar industries can be quoted as symbol of the city's industrialization too, as the "Usina Freitas", from 1914 and the "Usina Fortaleza" (the future Usina Tamoio as will be shown)

[269] Kappa Magazine, p. 36-39;
[270] *Idem*, p. 20;
[271] PACHECO, Américo Carlos, p. 101-102;

created in 1905[272] and industrialized in 1917. Another kind of industry was the industry of castor oil and cotton, like the one of Said Acar created in 1918.[273]

As could be seen, the railway was responsible for attracting people to the city. Until 1935 it employed 390 workers, after a while this number increased to 411 in 1936 and 422 in 1937. However, besides that, the railroad attracted some industries like sawmill and foundries, as examples can be mentioned the sawmill *Serraria Luzitana* of Virgílio Rodrigues and the foundry of Cypriano Martinez.[274] So, even in the beginning of its degradation caused by the advent of the roads, the intermodal thoughts still made the railway cause impacts in the urban life. An industry of pasta, created by Nicolau Carmona and José Carmona in the 20s, provided food to the *SESI*s (Schools of the Industrial Social Service) and to the *Estrada de Ferro Araraquara Cooperative*. It began with the manufacture process, but it didn't take too long to be mechanized. It started to produce corn flour during the Second World War, because the wheat flour became scarce. It closed its doors in 1993.[275]

Image 50 – Carmona Factory in the period when the pasta was dry under the sun and an image of the product package from 1992. Source: Kappa Magazine/2014, p. 30.

Until that moment the industrialization was connected to the agriculture. The first family industry that started a business without this link was an Italian one of Henrique Lupo. In 1921[276] they created a socks enterprise called *LUPO*. The first productions were made in the family's house with two old machines and a bathtub used to do the dyeing. It was the first industry to use the polyamide in the production of male socks in the 40s and the first one to produce pantyhose with

[272]http://www.araraquara.com.br/index.php/todas-categorias/cidade/2547-simioni-pede-o-tombamento-da-antiga-usina-tamoio (2015)
[273] PACHECO, Américo Carlos, p. 136-137;
[274] *Idem*, p. 163;
[275] Kappa Magazine, p. 30-32;
[276] *Idem*, p. 20;

Lycra. It became internationally knew, what gave it the opportunity to acquire the license to produce sport products to Reebook, a British brand, and Speedo, an Australian brand. Its pioneering made it growns and it changed its place in 1937 to where today is the clock building in the center of the city. In 1955 it was expanded and in 1980 it changed place again to the surrounding area of Araraquara, nearby the Washington Luís Highway.[277]

Image 51 – The couple: Judith and Henrique Lupo.

Source: Kappa Magazine/2014, p. 21

Image 52 – The beginning of the production of LUPO's socks.

Source: Kappa Magazine/2014, p. 21

The LUPO legacy was not only the industries buildings. They constructed next to the railway a recreation center called "Melusa Clube" in 1941[278] to their employees. The place is frequently used by municipal events.

During the world crises of 1929, Araraquara lost some establishments, because they were to small to support this external influence. To try to reduce the damage, the municipal government started to give some facilities to the enterprises. For example, the industry of edible oil and cotton seeds, *Dianda Lopez*, got an exemption from the taxes of twenty years[279]. Even doing it to many different economic sectors, the cotton became an important product on the city economy recover. All the population realized that, so in 1939[280] they promoted a party of the cotton called "Festa do Algodão, Cereais e Derivados". One of the most important industries of cotton processing was the *Anderson Clayton*, located in Vila Xavier. It produced margarine and oil, it received incentives from the government too and it made part of the municipal party.

[277] BARCELLONE, Wilson Lopes Christensen, p. 38-40;
[278] *Idem*, p. 39;
[279] Kappa Magazine, p. 22;
[280] BARCELLONE, Wilson Lopes Christensen, p. 36;

Image 53 – The entrace of the party of the Cotton. Source: BARCELLONE, Wilson Lopes Christensen, p. 36;

Image 54 – Stand of the *Anderson Clayton* in the cotton party. Source: BARCELLONE, Wilson Lopes Christensen, p. 37;

In 1943[281], the Italian Arcângelo Nigro made his house become an office that could transform tomatoes cans into household utensils. The enterprise grew, received many investments and became in 1956 the *Arcângelo Nigro e Filhos Ltda*. With all the development the industry went to a bigger place with 20.000m² in 1974. Fourteen years later, the management passed to be done by new shareholders, so the name changed to *Nigro Alumínio Ltda.* The company invented a pressure cooker internationally known as "Eterna", and it works until today.[282]

In 1945[283] the construction industry became responsible for 18% of the industrial jobs in Araraquara. This can be explained by the urban expansion already mentioned, with the emergence of new neighborhoods and industrial districts. Vila Xavier, the place described as the dwelling of the industrial workers, received paving until the cities Américo Brasiliense, Santa Lúcia and Ribeirão Preto between 1940 and 1950; the Avenue known today as Santo Antônio is from the same period, but it was called São Paulo Avenue; some institutional buildings were reformed, like the Santo Antônio church;[284] so all these works heated the construction sector.

Meanwhile, the food industry didn't lose its force. In 1946 the Swiss company, *Nestlé*, went to the city and stimulated the production of milk around the region, which consequently increased the cattle, but after 1960, the sugar-cane expanded and the milk passed to be imported. As such, in the mean period, during the 50s, many sugar-cane factories emerged, like "Usina Maringá",

[281] BARCELLONE, Wilson Lopes Christensen, p. 24;
[282] *Idem*, p. 40;
[283] PACHECO, Américo Carlos, p. 163;
[284] Kappa Magazine, p. 24;

"Storani", "Santa Cruz" and "Usina Tamoio", which, as already mentioned, took place of the "Usina Fortaleza" and got the fame to be the biggest factory of sugar-cane in the Latin America. Many of the industries of metal-mechanic brought by the railway gave support to the expansion of this economy.[285]

The "Usina Tamoio" is considered the most important of them. It was created by the Italian Pedro Morganti. He got the lands with a coffee plantation that couldn't give profits anymore. While he expanded the sugar-cane production he built a company town constituted by schools, hospitals, two movie theaters, churches, markets, butchery, pharmacy, soccer stadium and a jail. The company town preservation is a matter of concern to the city, but its heritage value is still under discussion. After Morganti's death, in 1941, his heirs got the rights of the property, but in 1969 they sold it to Silva Gordo family. Thirteen years later, the family sold it to the Corona group, and the factory became part of the *Açucareira Corona*[286], constituted of three factories. The digital newsletter "Jornal Cana" in 2005 described this group as the sixth biggest enterprise of the sugar sector. Currently the farm is managed by more than one group.

Image 55 – Usina Tamoio. Source: https://www.facebook.com/pages/Usina-Tamoio (2015)

Even with the ascension of the sugar-cane, in 1967, another Italian, José Cutrale Júnior, was able to build a new empire. His father went to Brazil during the 40s and he used to buy orange from Rio de Janeiro to export. After began some industries in other places of the State of São Paulo, his son obtained the juice industry *Suconasa* that already existed in Araraquara, so since then the city

[285] Kappa Magazine, p. 23-25 ;
[286] BARCELLONE, Wilson Lopes Christensen, p. 34-35;

started to be part of the Cutrale group.[287] Currently the industry continues to produce and the orange got a symbolic value, because its smell is characteristic from the city and all inhabitants and visitors realized that.

Image 56 – Two images from the producer sector of the industry of juice in Araraquara. The first image was taken around 1970 and the other one was taken after some production improvement. Source: Kappa Magazine, p. 25.

Since the 70s, Araraquara got as economic base the tertiary sector. The sugar-cane continued to develop progressively, because the Federal Government launched a program called "Proálcool" in 1975[288]. The aim of this action was to incentive the production of alcohol to attend the demand from inside and outside the country and to promote the use of alcohol as fuel.

At this period the railway was already managed by FEPASA. During 1976 its warehouses were occupied by the industry *Equipamentos Villares*, the one that produced pieces to the electric bus. This company lever the city economy, when it increased its production it changed from its place to the side of the highway Rodovia Manoel de Abreu and, besides the locomotive, it started to produce overhead cranes, laminate, water turbines, hydraulic crane and it was the first factory to produce drilling to get oil. So, little by little the company let the railway as the principal consumer to englobe the trade of roads and construction. However, in 1994 it was sold to *Sade Vigesa*,[289] a company specialized on railways, but after a while it was sold to "Inepar", an industry of construction of infrastructure, which still works as *IESA Projetos, Equipamentos e Montagens S.A.*[290].

Even with the national crisis of the 90s that ended with the creation of the "Plano Real" made by the president Fernando Henrique Cardoso in 1994, Araraquara developed its industries in 34,4%. Between 1990 and 2012 the industrial sector increased from 250 establishments to 512. All

[287] Kappa Magazine, p. 26;
[288] http://danilotlamonato.jusbrasil.com.br/artigos/120002732/pro-alcool-de-sua-criacao-aos-dias-atuais (2015)
[289] Kappa Magazine, p. 27;
[290] http://www.inepar.com.br/m01_unidades.html (2015)

the region between São José do Rio Preto and São Carlos, what includes Araraquara, represented around 37% of the richness of the country. [291]

The economic importance of the city attracted more investors. In November 05, 2011, the digital newsletter "Jornal o Imparcial" announced that a "Porto Seco" (dry port) would be installed nearby Américo Brasiliense by *Brado Logística*, but its jurisdiction would be done in Araraquara. So, with a building area of 6.500m², next to the railway and to the Terminal of Fuel of Petrobrás, the new intermodal warehouse were installed, which were made to transport products from the railway to the Santos Port, where they are exported.

Thus, it is not difficult to imagine why Randon, one of the most important national companies of auto parts, road implements and vehicles, decided to build a filial in Araraquara in 2014. It inauguration is scheduled to 2017, and it will produce wagons to railways and semitrailers to sugar-cane. According with *Kappa Magazine*, the population belives on the city development that this new industry will bring, they imagine that the railway can still influence the cities' life in a considering way.

However, the railway was attracted by the agriculture and by the geographic location of Araraquara, consequently, the easy mobility and the need of handwork made the market and the production be improved. So, the industry went to the city as an answer of the easy mobility, and now, after the railway had its influence reduced, the city is functioning in an intermodal way related to commercial issues. The factories go there to give support for the two land transport, without mentione the EMBRAER that is a third mobility linked to the city development as described before.

3.3 A French way of Preservation: is it an example for Araraquara?

In France the inventory started a long time before the concern of heritage preservation appeared. The aim of the first catalogues was collect all the architectonics monuments. As an example of an old survey is the "Memoires pour server à l'histoire des Maisons Royales" from 1681[292] made by André Felibien.

However, the first public action to manage this kind of service emerged only in 1837[293], when the "Comité des arts et monuments" was created. This group was responsible for collectioning sources about the French national monuments. No country had an initiative like this, which means that France was the pioneer in this field.

[291] Kappa Magazine, p. 28/78-79;
[292] CHASTEL, André. *L'inventaire general des monuments et des richesses artistiques de la France.* Ministère des Affaire Culturelles, March/2009, p. 09;
[293] *Idem*, p. 09;

Nevertheless, until 1872 this new subject didn't receive too much attention. Its importance came up after the elaboration of a collection of books launched by the Ministry of Public Instruction entitled "L'inventaire Général des richesses d'art de la France". They were 14 books written between 1874 and 1910[294], based on a cataloguing of Paris and its surroundings, which included lists from museums with the description of their objects.

In the beginning the inventories were done by students and volunteers. In 1944 everything that was collected until 1930[295] should've be further studied by the service called "Service du Casier Archéologique". The IV Plan of economic and social development was the first to contain prerequisites related to enlarge the "L'inventaire general des monuments et des richeses artitiques de la France".

> *"L'établissement d'un inventaire monumental tendra à la même politique d'intégration de ce patrimoine dans la vie nationale. L'inventaire portera sur les immeubles et objets mobiliers. Il aura, bien entendu, pour but fondamental d'établir le dossier scientifique de chaque monument classé ou figurant à l'Inventaire administratif afin d'en préciser la valeur artistique, historique et archéologique ; il éclairera les décisions en ce qui concerne les travaux de conservation. Il sera accessible aux enseignants ainsi qu'aux organisations et aux publications culturelles. Des commissions nationale et régionales devront en préparer l'établissement."*[296]

After that, in 1964[297] the institution responsible for the inventorying was created. Currently this organization is known as "L'inventaire general du patrimoine culturel". Until 1969[298] around 568 places had been catalogued. From 1970[299] on, the public institutions and the experts started to participate for real on this way of conservation. The inventory was done per region, so each one of them had its group, but in 1982[300] the "Directions Régionales des Affaires Culturelles" emerged to integrate all the existing initiatives.

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[294] CHASTEL, André, p. 11;
[295] *Idem*, p. 10;
[296] Citation of Marcel Aubert/1962 found in http://inventaire.aquitaine.fr/objectifs-et-missions/inventaire/historique-de-linventaire-general.html (2015)
[297] SMITH, Paul, http://rhcf.revues.org/705 (2015), p. 02;
[298] SIMON, Guillaume. *L'évolution e l'inventaire du patrimoine ferroviaire immobilier en France, des années 1970 à nous jours.* Published in « Revue d'histoire des chemins de fer, 2009, http://rhcf.revues.org/704 (2015), p. 01;
[299] PELLOQUET, Thierry. *L'inventaire general du patrimoine culturel et l'aménagement du territoire.* Article of the Colloque «Une nouvelle gouvernance pour la destion du patrioine architectural et paysager français: des ZPPAUP aux AVAP du Grenelle II », Université d'Angers, 2011, p. 01;
[300] *Idem*, p. 01;

In 1986 national programs of industrial cataloguing started to appear, which means that 10 years before UNESCO inserted the industries in its lists, France had written documents with basic sources of industries from all over the country. However, the railways started to be inventoried even before that, in 1984. So, in this field France is an important referential.

> *"L'étude du terrain entreprise par l'Inventaire général, précisément dans ces années, a fait évoluer cette classification en ce qui concerne les chemins de fer au vu de l'imbrication des réseaux ferroviaires dans le tissu industriel et de l'influence des chemins de fer dans la localisation des activités industrielles"*[301]

Up to that time, the inventories normally contained images and photos, but in 1987[302] they started to include different kinds of materials. Among them can be quoted sound files, documents about the work techniques and sources about all the railway system. There were many kinds of resources, but they weren't conserved with a historiographic review, they were just conserved without a historic context.

> *"On constante une progression réulière vers ce type de format depuis les années 1980, avec la mise en place progressive des dossiers dits électroniques. L'utilisateur est par ailleurs devenu très demandeur de ces supports visuels aidant à la copréension."*[303]

In 2004 the inventory started to be managed only in the regional frame again. So, around 2000, France created some digital catalogues, which divided the catalogues by region. The principal website is the http://www.culture.gouv.fr/culture/inventai/patrimoine/index.htm; it was made by the Ministry of Culture and Communication. It consists in seven data bases, the two principals are:

- Mérimée[304]: it has the heritage that is constructed. The railway is divided in three areas of study: station, rail line and bridges. Each region develops these areas differently, so one region can have more sources about one of the subjects than about the others.
- Palissy[305]: it catalogues the movable objects.

[301] Citation took from the book *La ligne des conquetiers (1875-2006). De Bondy à Aulnay, un chemin de fer au service du développement local,* wrote by Evelyne Lohr and Mélaine Quéval, found in the article of Marie-Noëlle Polino, *L'Association pour l'histoire des chemins de fer em France et le patrimoine ferroviaire*. Publised in Hitoriens &Géographes, nº 405, 2007, p. 145;
[302] POLINO, Marie-Noëlle., p. 145;
[303] SIMON, Guillaume, p. 07;
[304] *Idem*, p. 02-03;
[305] SMITH, Paul, p. 02;

The way that this expose the heritage is very interesting, because show technical details, reports, images and while the objects are being developed, these data bases are able to have their information renewed. It would be interesting to create something like that in Brazil because the west of the State of São Paulo has the railway as a link to the rest of the industries. Some of them have already a study about it, like *LUPO*, wich has a website describing its evolution, but it is not open to put other kind of information then the historic context.

The western part of São Paulo contains four lines, which can be used as the regional division, because each of them was developed in a different way and caused different effects to the State. Thus, the *Estrada de Ferro Araraquarense* is one of the four railways and Araraquara is just one city influenced by it. With the data already exposed about this city in this paper work, the catalogue below will put in evidence the changes that the railway caused in the urban grid and the industries that were part of the cities life. As in France, this first surveying will open many kinds of different fields of studies.

CHAPTER IV. Proposal of Valorization

SUMMARY IN FRENCH

Pour synthétiser l'ensemble de l'étude, ce chapitre fait une présentation de l'utilisation des données recueillies pour l'établissement d'un inventaire capable de mettre en évidence la valeur de la station ferroviaire Araraquarense. De prime abord, a été organisée une liste des industries qui faisaient partie de l'industrialisation de Araraquara. Grâce à cette liste, les quelques usines sélectionnées ont montré l'influence du chemin de fer par son organisation spatiale.

Toujours dans la même lignée de pensée, ont été listés des bâtiments et des espaces urbains qui ont connu également une influence sur la voie ferrée. L'inventaire créé se présentera comme une proposition de préservation, ainsi que dans le cas Français, par le biais de la collecte de données, les chercheurs peuvent venir pour découvrir des techniques ou des faits historiques importants qui ont été perdus au cours des années.

De ce fait, ce sera une façon de faire diffuser et de recevoir de nouvelles informations et pour cela il sera proposé la création d'un musée virtuel. Pour la valorisation du chemin de fer, elle doit éveiller l'intérêt de la population, le gouvernement et les investisseurs. Par conséquent, une exposition plus interactive et publique des informations collectées sur ce patrimoine industriel peut susciter l'intérêt nouveau pour leur préservation et pour l'élaboration des projets de conservation et de la réutilisation. Cela peut empêcher que l'infrastructure devienne oublier ou effacer du tissus urbain.

4.1 Industrials' Catalogue

As already shown, the industrialization started in Brazil after the Royal family went to leave there. In Araraquara it started in the 1880s when the agricultural machinery arrived, but the urban expansion began to be considerable after the railway got to the city, in 1885. Below, there is a list of industries from Araraquara divided in types of production. It will be from this list that will be taken some factories to make a previous catalogue with some basic information.

COFFEE PRODUCTION	
INDUSTRY	**DATE OF ARRIVAL**
Máquina de Beneficiamento Correia	1915
Café Araraquara	-
Café Santo Antônio	-
Máquina Família Nogueira	-
Máquina Bicharred	-
Descascador de Café Blundi	-

OIL PRODUCTION	
INDUSTRY	**DATE OF ARRIVAL**
Said Acar & Irmão (castor bean and cotton)	1918
Sociedade Anônima Cotonifício Brasil	1920
Anderson Clayton (cotton)	1930s
Dianda Lopes (edible oil and cotton)	1934
Algodão Guassu (cotton)	-
J. Vicitas	-
Sociedade Anônima da Sede Nacional	-
Reunidas Irmãos Lia	-
Palamonte Lepre	-

FOOD PRODUCTION	
INDUSTRY	**DATE OF ARRIVAL**
Bala Montavana (production of sweets)	-
Mercearia e Confeitaria Lauand (production of sweets)	-
Companhia Paulista de Alimentos Biscoitos Duchan (production of sweets)	-
Fecularia Guarany (production of flour)	-

Industry of corn flour of Adrelino Correia	-
Fecularia de Milho de Vicente Grazina	-
Sociedade Itarequê (cassava)	-
Reunia Casa Bologna (productio of flour)	-
Polo Norte of Paulo Alimanda **(f**actory of ice and tanning**)**	-
Factory of ice and salami Américo Danielli	-
Pineapple production of Baltieri Silvestro	-
V. F. Correia (rice an coffee production)	Before 1915*
Carmona (production of pasta)	1920s
Nestlé do Brasil	1946
Factory of pasta São João	-
Usina Tamoio (distillery)	1950s
Cutrale (orange joice)	1967
Usina Bonfim (distillery)	-
Engenho Central (distillery)	-
Kaiser (beer production)	1995

WOOD OBJECTS PRODUCTION AND FOUNDRY	
INDUSTRY	**DATE OF ARRIVAL**
Furniture Carrera	1909
Mechanics Ortiz	Before 1915*
Locksmiths workshop	Before 1915*
Locksmiths workshop Thomaz de Francesco	-
Locksmiths of Adolpho Luppi	-
Locksmiths Santa Lúcia	-
Locksmith Lusitana of Virílio Rodrigues	1919
Carpentry Hermínio Lecco	-
Carpentry Miguel Costa	-
Furniture Castelan	-
Carpentry of Ferraria Luiz Onofre	-
Wooden artifacts Carlos Necke	-
Brooms Ângelo Smirne	-
Furniture Luis Cherksky	-
Mechanics Cypriano Martinez & CIA	1920s

Foundry and Carpentry Popular	-
Mechanics, mercenary and Carpentry Paulista	-
Industry of cans of leaves of Antônio Pizolli	-
Nigro Alumínio Ltda	1943

PRODUCTION OF CERAMIC	
INDUSTRY	**DATE OF ARRIVAL**
Tiles factory of Alexandre Zaramelo	-
Irmãos Peroni	-

CLOTHING PRODUCTION	
INDUSTRY	**DATE OF ARRIVAL**
Virgínea (hat factory)	-
Bandeirantes (hat factory)	-
Factory of crown and hats of Aurino Duarte de Oliveira	-
Bruno Bonelli & Cortese (shoes factory)	-
Jorge Cuchadidi (shoes factory)	-
Lupo (sockes factory)	1921
Esmeralda Tecidos em Geral (textile)	-
Factory of White clothes of Nicolau Barreto	-

VARIOUS PRODUCTIONS	
INDUSTRY	**DATE OF ARRIVAL**
Sabão Imperial (soap production)	-
Sabão Masiero	1888
Accordion factory	-
Accordion factory of Pedro Rodella & Filhos	Before 1915*
Tanning Felisberto Pavezi	-
Industry Indigo and Pantings Paulo Shoiten	-
Oficina Construtora de Máquinas Agrícolas e Industriais of Mário Gaiara (machine to rice prouction)	1933
Equipamentos Villares (Infrastructure equipment)	1976

* It was`t found the date of the arrival of the industry, but it was found in the Municipal Album from 1915.

With this data it can be confirmed that the food production, sawmill and the foundry industries dominated the industrial scenario of Araraquara. Unfortunately it wasn't found much information of all these industries, and probably, with a longer research can be found more of them. To this research was chosen sixteen industries which had information able to be used in a previous catalogue. These files are in annex and it will make clearer the consequences of the arrival of the train station in the urban grid.

Thus, below there are the industries selected:

Araraquara Industrial Inventory 2015		
INDUSTRY		**DATE OF ARRIVAL**
001	Estação de Ferro EFA	1885
002	Sabão Masiero	1888
003	Móveis Carrera	1909
004	Fábrica Carmona	1920
005	Oficina Mecânica Ortiz	Before 1915
006	V. F. Correia	Before 1915
007	Oficina de Serralheria	Before 1915
008	Casa Rodella	Before 1915
009	Lupo	1921
010	Dianda Lopes	1934
011	Anderson Clayton	1930s
012	Nigro	1943
013	Nestlé	1946
014	Usina Tamoio	1950s
015	Cutrale	1967
016	Equipamentos Villares	1976

After this selection, a datasheet was created. It contains basic information like: name, date of inauguration (year or period), actors (principal agents like engineers, investors, owners, and architects), type of industry (textile, food, equipment, etc.), history of the building (a brief historical and spatial analysis), current situation of the building (what the building became), location and photos. The general result is shown below and the files are in annex in the end of the first part of this thesis.

Industry	**000 -**
Date of Inauguration	
Actors	
Type of Industry	
History of the building	
Current Situation	
Location:	
Photos:	

The item “Location” was developed with more attention as if it was the principal factor to put in evidence the railway influence. The reason of that is that with the expansion of the urban grid and the arrival of the automobile, the distribution of the industries started to change. To illustrate that, five maps of the city in different periods were used; they are dated from 1880, 1929, 1938, 1963 and 2014. These maps are able to give the idea of how the city was developed after the railway arrival, during its development and after its decline.

Image 57 – Map able to represent the development of the city. Legend: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; Green: city in 1880; the red line is the way of the railway Adjustment: LOURENCETTI, Fernanda.
Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

After the data sheets got ready, all the locations were put in the same map. Unfortunately, it wasn't possible to locate the exact place of some of the industries, but it was used the ones that were located in a more precisely way. This new map showed that around the 50s the industries went to places far from the rail station, but they were built in places nearby highways or avenues.

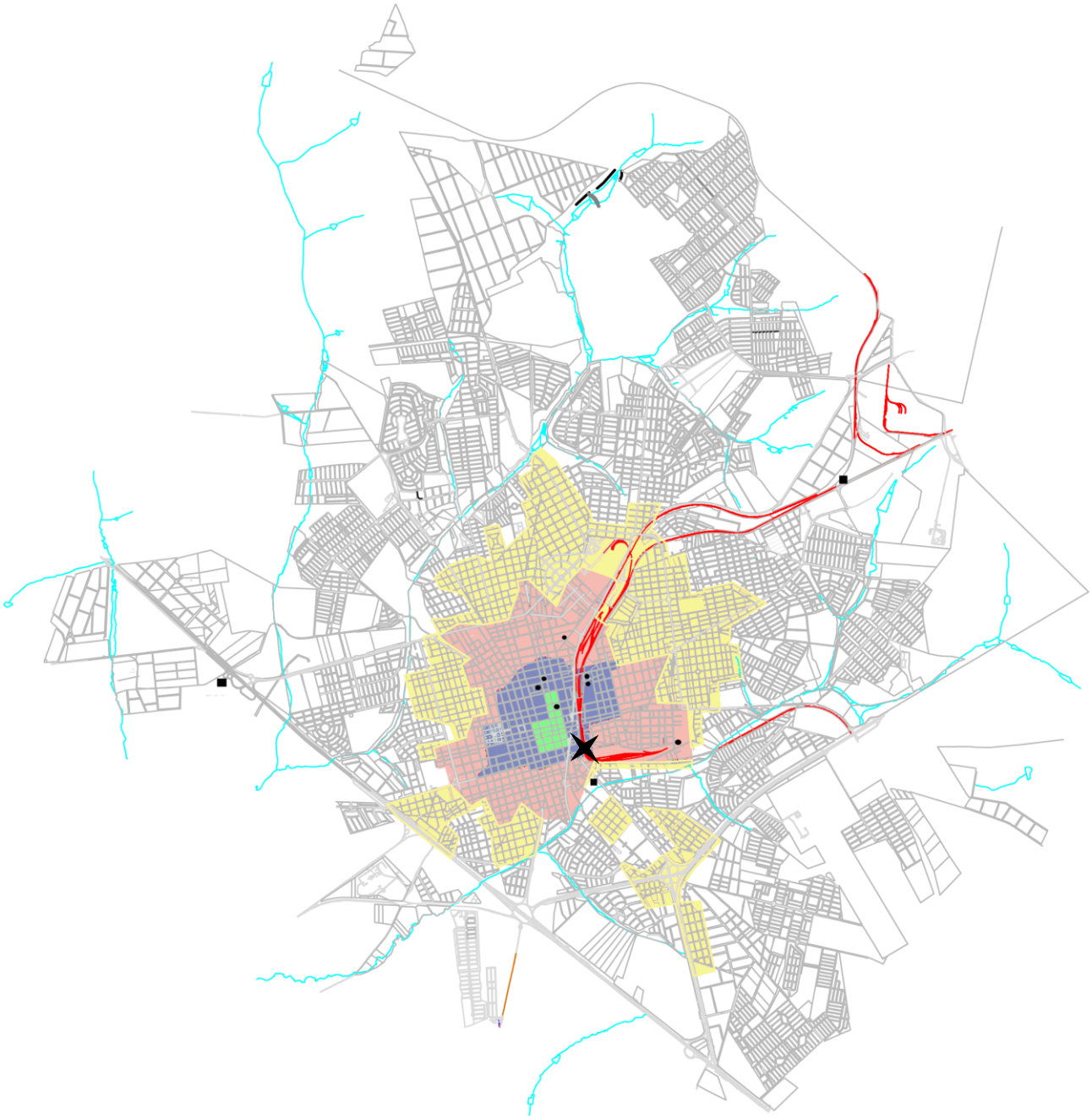

Image 58 – Map of Araraquara with the location of some industries. The circles represent industries built until 1945, the squares are the location of industries from 1945 until 2000 and the "X" is the railway station. Adjustment: LOURENCETTI, Fernanda de Lima. Sources: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

Currently, the rail station changed its place; it was built another station out of the center of the city and a new rail circuit. This new railway was built because people were complaining about the accidents that the train used to cause on its way and about the air and sound pollution. So in November 21, 2014, the new sector of the railway was ready. It was constructed by the *National Department of Transport Infrastructure* (DNIT) and operated by the company *América Latina Logística* (ALL) after it was inaugurated in 2015.

Image 59 - Map of Araraquara with the location of the railways. The red one is the old railway; the blue one is the currently railway. Adjustment: LOURENCETTI, Fernanda de Lima.
Sources: http://www.araraquara.sp.gov.br/Pagina/Default.aspx?IDPagina=3972

The Randon industry, the producer of auto parts, road implements and vehicles mentioned before, will be built next to this new railway, between Araraquara and Américo Brasiliense, which, one more time, reinforces the importance of the railway in the industrial and urban development. Thus, to set up the industries development based on their production and location tells part of the history of the city and the railway. These three elements, territory, industries and mean of transportation are inseparable. The next item of this chapter will explain that.

4.2 Urban Buildings' Catalogue

The expression "urban heritage"[306] was used for the first time by Gustavo Giovannoni, an Italian engineer who studied in a course of history of medieval and modern art and became an effective member of the Association Artistic and Cultural of the Architecture of Rome.[307] He wrote "Vecchie città ed edilizia nuova", in which he presented the relationship between the old city and the new kind of urbanization.

In Araraquara the first urban heritage that was built was the church and the square where it is located. During the whole history of the city many other religious and institutional buildings, public places and even the industries and private habitations were built according to its period and society. Unfortunately, many of these constructions were already replaced, reformulated or they can be found in a calamity state. In France the studious were woried about this lost since 1791.

> *"Parmi les neuf conditions ou critères motivant chacun la conservation des biens condamnés, l'intérêt pour l'histoire, la beauté du travail, la valeur pédagogique pour l'art et les techniques sont pour la première fois* (in 1791) *énumérés ensemble et constituent une definition implicite des monuments ou du patrimoine historique. On peut y voir l'amorce de la concervation réactionnelle."*[308]

This concern made to emerge the first kind of inventory for this kind of heritage in 1837, as mentioned before. So the first items catalogued by this research were the public spaces. In annex can be see files about the Praça Matriz, where the city started, the Praça da Independência, created with the first legacy of the city, and the Praça Pedro de Toledo, which was occupied by a sequence of different urban services like the first cemetery, a jail, the second scholar group and the Municipal Council, before it became the currently square.

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[306] CHOAY, Françoise. *L'allégorie du patrimoine.* Edition of Seuil, 1992, p. 151;
[307] http://www.treccani.it/enciclopedia/gustavo-giovannoni_(Dizionario-Biografico)/ (2015)
[308] CHOAY, Françoise, p. 84;

To catalogue these squares as the first example of urban heritage, it was followed the same logic used to do the industrial catalogue and the same map produced before. So it was described the type of place and there were collected information about the period of its construction, its name, the history of the place, the actors, the location and photos. The only knew data was the insertion of the project of the squares. They are open spaces, so their lay are part of the city's drawing.

Below the disposal of datasheet is described, but the complete files can be seen in the annex in the end of this report.

Name:	**000 -**
Type of Urban Space	
Period of the first construction	
History of the place	
Actors	
Location	
Project planning	
Photos:	

However, the aim of this project is to improve the value of the railway. Above, the railway, the industrial heritage under study, built some urban services, and some other industries, like *LUPO*, did the same. So in annex can be seen files of some buildings made to supply the necessities of the railway's employees and another one constructed by *LUPO* to its workers. To illustrate this the model made to catalogue the industries was used, so it can be seen the name, the type of space, the period of construction, the history, the actors, the location and photos, like can be seen below.

Public Space	**000** –
Type of Urban Space	
Period of the first construction	
History of the place:	
Actors	
Location	
Photos:	

This proposal of valorization was inspired in the development of the urban planning. Renata Campello Cabral[309], a Brazilian professor of the University of São Paulo, published in a famous

[309] http://www.vitruvius.com.br/revistas/read/arquitextos/15.179/5531 (2015)

virtual magazine called Vitruvius, in May 15, 2015, an article about the dimension of the urban heritage in the Athens Charter, which, as presented before, was the first concrete step to the preservation of the urban heritage. In this article she presented how Françoise Choay[310] introduced the concepts created by Gustavo Giovannoni in France. She wrote that Choay put in contrast two points, the "urban tradition" and the "technical changes" and that to link these two concepts Choay showed the capacity that the circulation has to connect both of them to the territory.

In the same article Cabral quoted the Italian professor, Vittorio Guido Zucconi, who gives classes in the University of Padua. The article describes how Zucconi divided the process of linking the two concepts presented by Giovannoni by the circulation capacity presented by Choay. He planned it in three parts: the first one is the thesis, which presents all the problems and lost that the old city had; the second part would be the urban expansion, which would present the differences of the urban planning along the years and how they coexist; and the last point would be the result of a synthesis of all the theory in a urban planning able to unify all the city.

Thus, the catalogue of the urban heritage, which includes the industrial heritage that was put in evidence in this report because of the principal aim of the thesis, is a way to understand the urban expansion to try to solve the urban problems. In this case, the problematic is the abandonment of the railway, which passes in the middle of Araraquara and influenced a lot its development. Nevertheless, this is a part of a big amount; Araraquara is one of the main cities that have one station of the old *Estrada de Ferro Araraquarense*, which means that the comprehension and the resolution of this case of study is just the first step to understand the territorial expansion of the west part of the State of São Paulo. This knowledge should be exposed to show people that the train was and still is important to the cities' life, so the catalogue and the whole historical reconstruction are made to give support to a Virtual Museum as written in the last part of this chapter.

4.3 From the Inventory to a Virtual Museum: a Way to Preserve and Diffuse the Railways Heritage

> *"El Inventario es, por tanto, una de las operaciones del museo (el acto de inventariar), pero deslocalizada: un museo sin colecciones y sin edificios – o, al menos, sin edificios destinados a la conservación de las colecciones - . Un museo, en definitiva, que se reduce a una función: transcribí la realidad sensible en soportes simbólicos mediante técnicas diversas*

[310] CHOAY, Françoise. *L'allégorie du patrimoine.* Edition of Seuil, 1992;

> *(escritura, fotografía, dibujo, trazados fotogramétricos, etc.); en efecto, desde su creación, el Inventario incluyó la explotación de las bases de datos y de imágenes. A diferencia del museo clásico, el Inventario archiva un número potencialmente ilimitado de obras y permite gracias a sus bases de imágenes informatizadas, un acceso a los dato con una rapidez que nada tiene que ver con la que permite la consulta tradicional de los ficheros manuales."*[311]

Inventories are one way to conserve, and it make be possible to preserve things that can't be maintained in its material form as used to happen in the Institutional Museums. Cassiano dal Pozzo made a catalogue of aquarelle paintings able to transmit the knowledge of the 17th century in many different fields including biology, geology, zoology and botanic, which have short-live objects as a material to be preserved. François de Clarc made an inventory able to give support to an *Imaginary Museum of Moderns Sculptures;* it made use of the existing sculptures of the Louvre Museum, which are objects that can't be collected and put in the same place to be exposed.[312]

Thus, when the subject is virtualization it's not necessarily about something immaterial or unreal. The French philosopher Deloche of Lyon 3 University, member of INCOM (International Council of Museums), made some studies about museology and one of them is based on the concept of virtual museum. He explained that to give life to a museum like this, some "substitutes"[313] are used. This kind of method is able to preserve the original object or something that can't be inserted in a museum using alternatives techniques. This concept is not new and it is not related only with the new means of communications. It exits since many years ago, the philosopher quote the inventory of the Alexander School[314], which was constituted by miniatures of machines as a way of conservation.

> *"(...) a virtualização é a dinâmica mesma do mundo comum, é aquilo através do qual compartilhamos uma realidade. Longe de circunscrever o reino da mentira, o virtual*

[311] DELOCHE, Bernard. *El museo virtual.* Presses Universitaires de France, 2001, translated by Lourdes Pérez, p. 148. The inventory is, therefore, one of the operations of the museum (the act of inventory), but delocalized: a museum without collections and buildings - or, at least, no buildings intended for the preservation of collections -. A museum, in fact, that is reduced to a function: it transcribes the sensible reality in symbolic support by various techniques (writing, photography, drawing, photogrammetric paths, etc.); Indeed, since its inception, the inventory included the exploitation of databases and images. Unlike the classical museum, the inventory archives a potentially unlimited number of works which is allowed by its computerized images bases, an access to the data with a speed that has nothing to do with the traditional consultation manual files.
[312] *Idem*, p. 149/154;
[313] *Idem*, p. 162;
[314] *Idem*, p. 162;

é precisamente o modo de existência de que surgem tanto a verdade como a mentira."[315]

If the concept presented in this last quote and the theory used by Deloche were put together, it will result in an interesting conclusion, that all kind of loyal reproduction of something that already exists can be consider as a virtualization used to preserve it. Some researchers of paintings and sculptures don't agree with the virtualization, some of them say that it is a kind of forgery, but in the urban field, the reconstruction of the past using the new technology is the most logical way of preservation, but at the same time it is very dangers. Photos, videos, electronic sketches help the researchers to reconstruct the old urban drawings, and with the passing time the reconstructions can be changed because of new discoveries or different ways of interpretations.

To do this kind of conservation it's important to have a good research about the subject with all the old maps or images took from different periods. They can be used as a referential to the elaboration of a new way of representation, which can be made to give information for all kind of visitors and not only to people who has some kind of particular knowledge. This is important because one of the functions of the museums is to be informative. According to Lèvy, another French philosopher, the information is already the virtualization of a fact, it is transmitted, interpreted, related to other information that will differ from person to person and, when the receiver thinks that is necessary, he will actualize it. Lévy described the knowledge as something virtual, which can suffer many changes to adapt the person with new situations.

Thus, the information presented by this report is already a virtualization of the development of part of the State of São Paulo and of Araraquara able to conserve and increase the heritage value of the railway and able to put in evidence the urban and other kind of industrial heritage. Like Critoforo Sérgio Bertuglia, a professor of Urban and Regional Urban Planning of *Polytechnic of Turin*, affirmed in a preamble about Paolo Galluzzi, an Italian historian of science, to rebuild an urban center it's necessary to recover its history, which need to be part of the museum exhibition.

"*Non si tratta solo delle creazione di musei interamente virtuali (fenomeno, tuttavia, presente e suscettibile di sviluppi soprendenti e capaci di dischuidere possibilità oggi inimmaginabili), ma anche, e particolarmente,*

[315] LÉVY, Pierre. O que é virtual. Traduction made by Paulo Neves of the original book "*Qu'est-ce que le virtuel?*, Paris, 1995", p. 101. Virtualization is the same dynamic of the ordinary world, the one that we use to share a reality. Far from circumscribe the kingdom of lies, the virtual is precisely the mode of existence that arise both truth and falsehood.;

dell'introduzione, appunto, di elementi di virtualità e, con questi, di novità cruciali nei musei, diciamo così, reali."[316]

However, the Institutional Museum can make use of virtual exposition as part of its exhibitions. This can help the museum be more didactic and it will have a bigger repertory to enrich its collection. Besides that, the virtual accessories can receive actualizations easily, because it is open to the insertion of new information. To build a space to The *Chair Museum of Lyon* is impracticable, but the virtual museum can include countless objects and can always list a new one.

In the case of this research many kind of virtual material were used, like photos, scanned maps, some newspapers scanned too and some web sites of old magazines which were virtualized to make the consulting easier. So, a virtual museum can be a way of dissemination of knowledge and a way to rebuild a part of the history. The case presented in this report is only part of a big legacy that can be familiar to the society and that can be improved by studies about the other cities of *Estrada de Ferro Araraquarense*. The virtual can be a way to put all the pieces of the São Paulo State industrial and territorial history of development together, and it will always be able to be uploaded.

The heritage of the mobility is always changing and influencing in many fields. Institutions like *Cité des Science & de l'Industrie* in Paris work already with this kind of subject in a very technological and playful way. The virtual support that this place gives to represent the evolution of the means of transportation is crucial to make people understand their importance and it is able to call the visitors attention to the influence that the transports had during the years.

[316] BERTUGLIA, Cristoforo Sergio; BERTUGLIA, Francesca; MAGNAGHI, Agostino. *Il Museo tra reale e virtuale. Prefazione di Paolo Galluzzi.* Riuntini editor, Roma, March/1999, p. 255. It is not just a question of an entirely virtual museum (phenomenon, however, presente able to develop and to currently open up unimaginable possibilities) but also, and especially, the introduction of virtual elements and, with these, of crucial news in, which we can call as, real museums;

CHAPTER V. Conclusion

The Brazilian railway has around 180 years of history since the first law launched to its insertion in the country. The French railway history is a little bit older; it started around twenty years before. Both of them had influences from the British technology and both of the railways declined after the First World War. The way of management is the real difference between them, while in Brazil the rail started to be deactivated; in France it continued its history improving its use.

To enhance the railway system turned it in an important part of the French history, so the country started to preserve the rail memory since 1984, before Brazil and UNESCO. France always saw the mobility as part of its territorial unification, which made the country become one of the most important examples in the frame of the railway system after the creation of TGV, in 1980. As was shown in this report, in the west of São Paulo the effects of the railway on the territorial development were crucial too, but until now the country doesn't have a consistent way of preservation to this knowledge.

The trail of the Brazilian railroad is being erased. The decrease of its use turned it in a transport of merchandise. In the west of the State of São Paulo there is no integration between the cities and the train. The *Estrada de Ferro Araraquarense*, presented in this thesis is one of the four railways that constitute the rail system of this quota of the State. It provided the territorial unification and to understand its development is a way to understand the progression of the State.

Thus the importance of the railway was already recognized in France, and the French cities made it be part of their urban planning. To preserve the railway was no longer to preserve the train stations and some objects as the Athens Charter defended, but became a challenge to the professionals related to the urban planning, they are supposed to find new uses, functions and integrate the railway to the city, which matches to the Venice Charter. Besides that, the intermodal became the most popular concern between them too.

Araraquara, as the first city of the railway under study received many immigrants, infrastructures and industries after the arrival of the train. Even being founded before the advent of the railroad, the city developed faster after its appearance. The urban drawing was attracted by the new rail line, the same happened with the new services and trades. The inventory created to preserve the Brazilian railway memory started to be organized in 2000, but it doesn't show the importance that the railway had to the territorial, economic and social development. Even without a real access to this catalogue, the explanations found about it described it as a list of materials and buildings.

The museum that is located in the Araraquara's train station follows the same philosophy. It has many objects, photos and documents, but it doesn't explain the relationship of that railway with

the city. Like this, many other industrial heritages got lost with the railway. So, like happened in France, to identify the railway value is a way to conserve more than this heritage, the data collected is the first step to make the history get known.

Currently the railway of Araraquara changed its course, and it wasn't found any kind of purport to the whole infrastructure left. To understand the importance of this infrastructure and call the attention of people for it can make it be part of an urban planning. If the rail falls in neglect, it will start to cause urban problems and this will give to the government and privet investors a reason to erase that infrastructure from the city. Like this many other memories will be forgotten and, even still having the railway providing progress, the city will lose part of its development instead of use the old to build something knew. Understand the past can provide a better future. The railway structure was the result of many investments and work, to lose it means to lose all the effort used to raise it.

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Annex

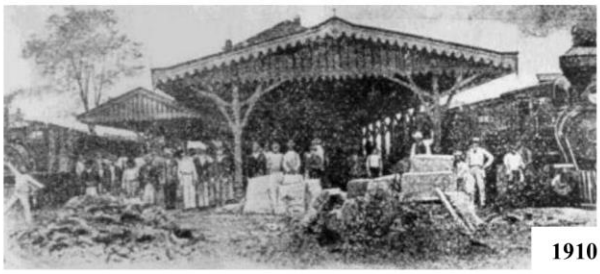
Araraquara Industrial Inventory 2015

Industry	**001** - Estação de Ferro EFA
Date of Inauguration	1885
Actors	Engineers: Adolpho Augusto Pinto, Luis Pinto and Benedito Antonio da Silva; Investor: Conde do Pinhal, from São Carlos.
Type of Industry	Transport
History of the building	In 1915 it was totally reformed. Currently, the principal building is conserved; it had lost some of its first characteristics like the wood panel of the pediment. The rest of the train station is suffering with the passing time.
Current Situation	Transport of goods Railway Museum

Location

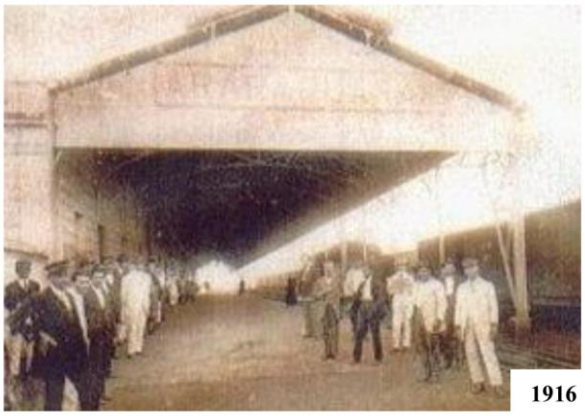
Map of Araraquara that shows the evolution of the urban grid: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; Green: city in 1880; the red line is the way of the railway. Adjustment: LOURENCETTI, Fernanda de Lima, based on original maps of each date. Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

Photos:



1910

2002



1916

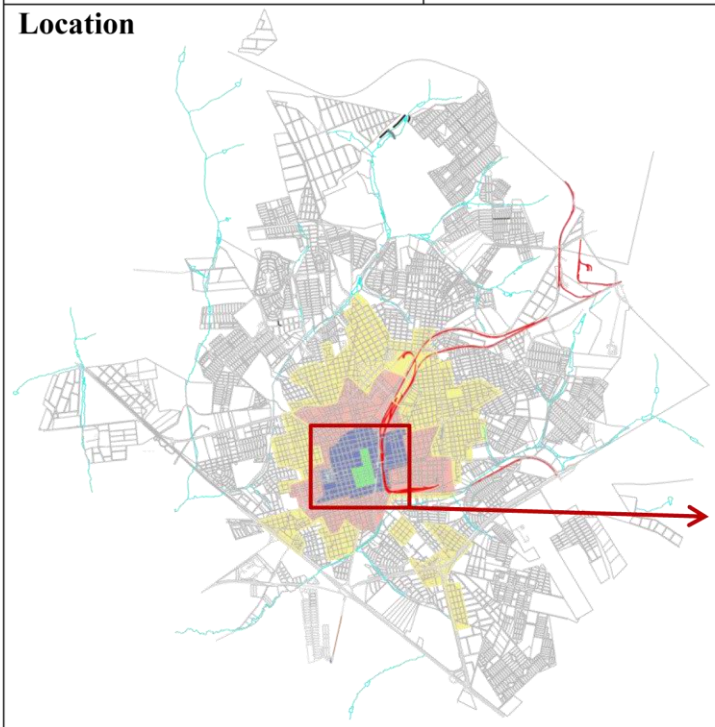
Images of the principal building.

Source:

http://www.estacoesferroviarias.com.br/a/araraquara.htm (2015)

Industry	**002** – Sabão Masiero
Date of Inauguration	1888
Actors	Owner: the Italian immigrant João Masiero
Type of Industry	Soap
History of the building	The address was Padre Duarte Street, nº 17, but there are no historical records.
Current Situation	The numbering of the city changed, so it was not found the exact location of the building to be able to see how it is used now.

Location



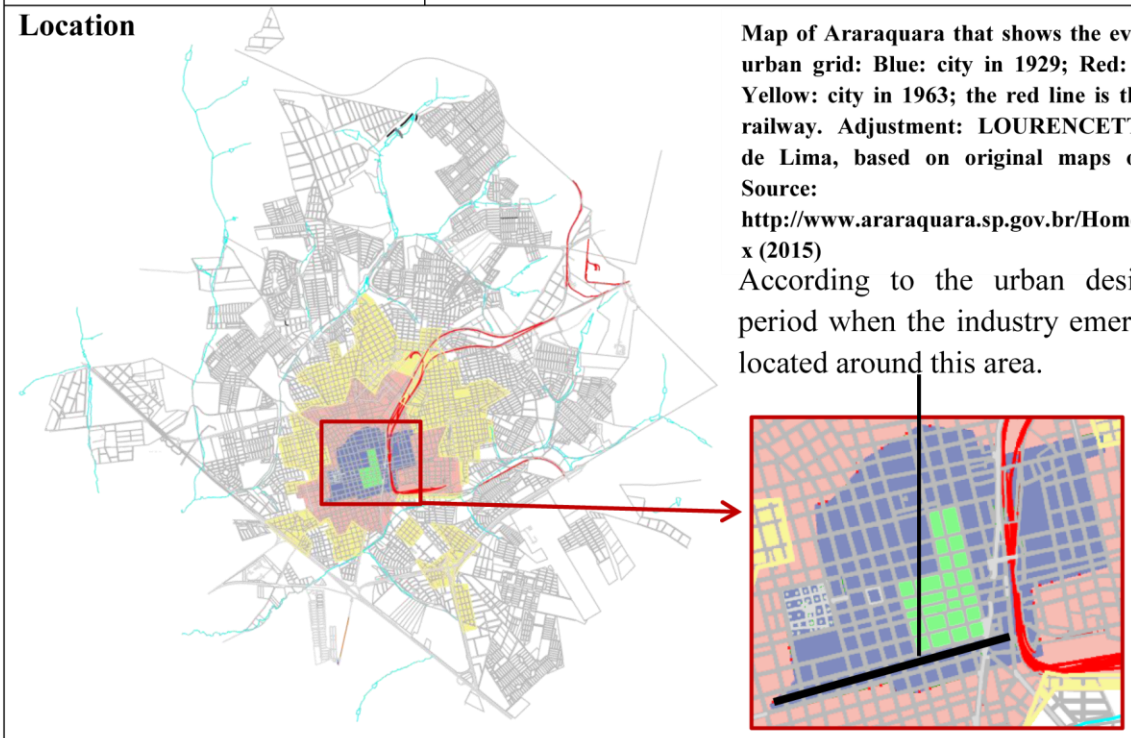
Map of Araraquara that shows the evolution of the urban grid: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; the red line is the way of the railway. Adjustment: LOURENCETTI, Fernanda de Lima, based on original maps of each date. Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

Street where the building was located.

Photos: No record was found.

Industry	**003** – Móveis Carrera
Date of Inauguration	1909
Actors	Owner: the Spanish Celso Martines
Type of Industry	Wood-based furniture
History of the building	The only record found was its location between November XV Avenue and September Seven Avenue.
Current Situation	It was not possible to find the exact location of the building because of the little information found.

Location



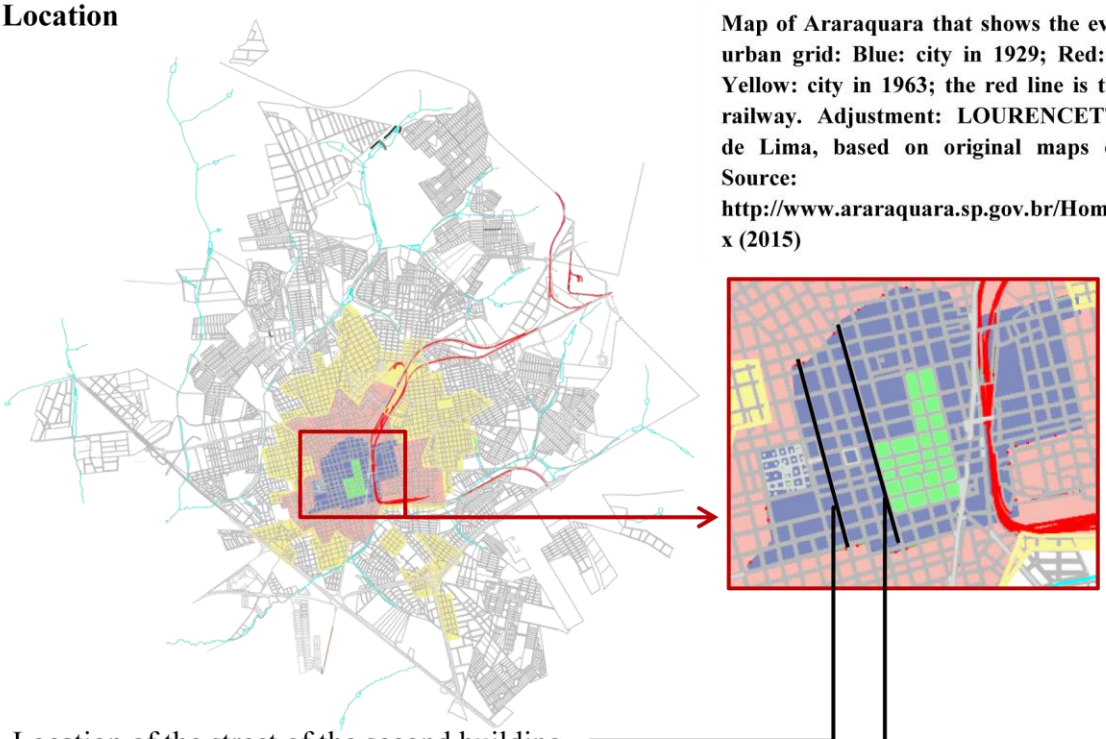
Map of Araraquara that shows the evolution of the urban grid: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; the red line is the way of the railway. Adjustment: LOURENCETTI, Fernanda de Lima, based on original maps of each date. Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

According to the urban design of the period when the industry emerged, it was located around this area.

Photos: No record was found.

Industry	**004** – Fábrica Carmona
Date of Inauguration	1920
Actors	Owners: Nicolau Carmona and José Carmona
Type of Industry	Food
History of the building	The first production was made in the Voluntários da Pátria Street. In 1930 the factory went to Expedicionários do Brasil Street and in 1993 it stopped to produce.
Current Situation	It was not possible to find the exact location of the building because of the little information found.

Location



Map of Araraquara that shows the evolution of the urban grid: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; the red line is the way of the railway. Adjustment: LOURENCETTI, Fernanda de Lima, based on original maps of each date. Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

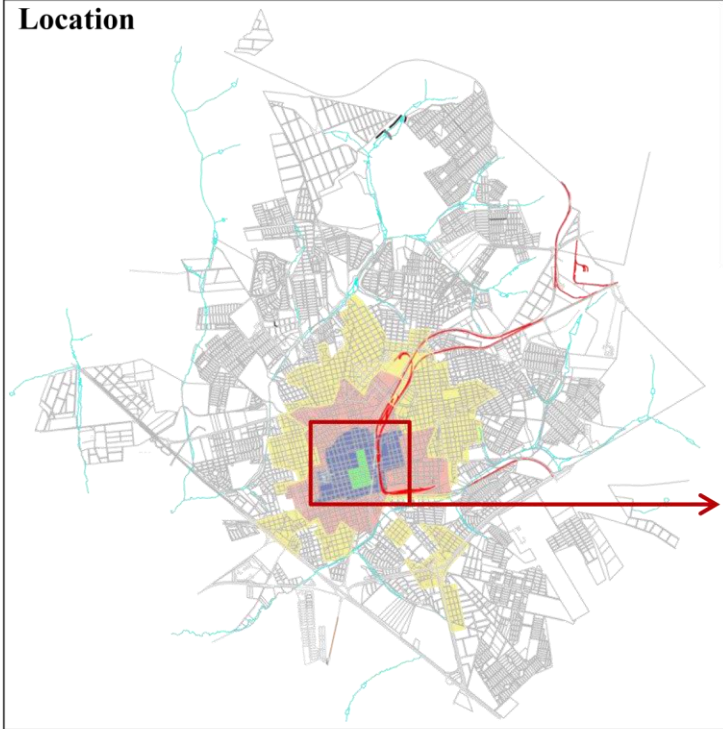
Photos:

Image of the first building.

Source: Kappa Magazine, 2014, p. 30.

Industry	**005** – Oficina Mecânica Ortiz
Date of Inauguration	No record was found, but the Album made to the city in 1915 has its photo, so the industry was created before that year.
Actors	No record was found.
Type of Industry	Coffee production
History of the building	The only record found was its location in Gonçalves Dias Street, nº 01.
Current Situation	It was not possible to find the exact location of the building because currently there is no nº 01 along the Gonçalves Dias Street.

Location



Map of Araraquara that shows the evolution of the urban grid: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; the red line is the way of the railway. Adjustment: LOURENCETTI, Fernanda de Lima, based on original maps of each date. Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

The street where the building was located.

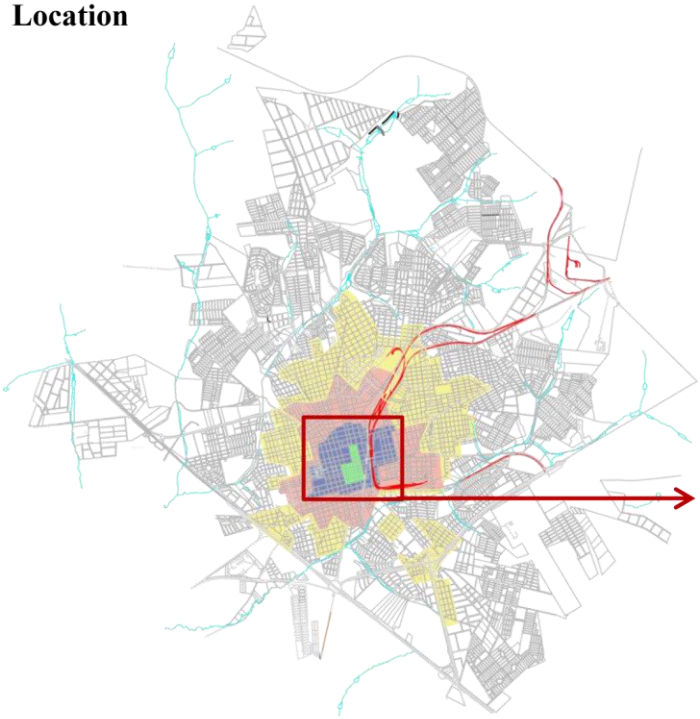
Photos:

Image of the workers.

Source: BARCELLONE, Wilson Lopes, 2009, annex.

Industry	**006** – V. F. Correia
Date of Inauguration	No record was found, but the Album made to the city in 1915 has its photo, so the industry was created before that year.
Actors	Owner: Vicente Ferreira Correia
Type of Industry	Coffee and rice production
History of the building	The only record found was its location in São Paulo Avenue.
Current Situation	It was not possible to find the exact location of the building because of the little information found.

Location



Map of Araraquara that shows the evolution of the urban grid: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; the red line is the way of the railway. Adjustment: LOURENCETTI, Fernanda de Lima, based on original maps of each date. Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

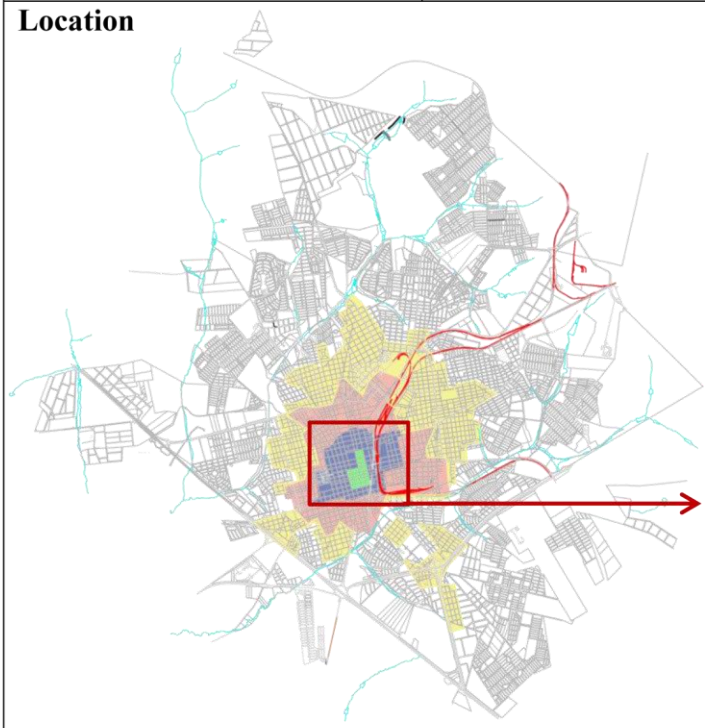
The street where the building was located.

Photos:

Image of the building. Source: BARCELLONE, Wilson Lopes, 2009, annex.

Industry	**007** – Oficina de Serralheria
Date of Inauguration	No record was found, but the Album made to the city in 1915 has its photo, so the industry was created before that year.
Actors	Owner: Thomaz de Franscesco
Type of Industry	Swamill
History of the building	The only record found was its location in São Paulo Avenue, nº 106.
Current Situation	It was not possible to find the exact location of the building because currently there is no nº 106 along the São Paulo Avenue.

Location



Map of Araraquara that shows the evolution of the urban grid: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; the red line is the way of the railway. Adjustment: LOURENCETTI, Fernanda de Lima, based on original maps of each date. Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

The street where the building was located.

Photos:

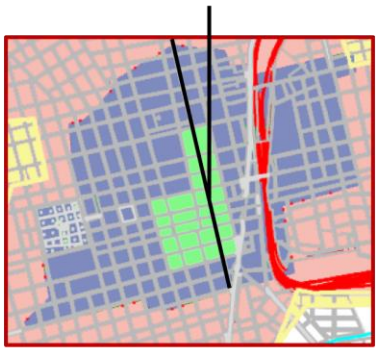
Image of the workers.
Source: BARCELLONE, Wilson Lopes, 2009, annex.

Industry	**008** – Casa Rodella
Date of Inauguration	No record was found, but the Album made to the city in 1915 has its photo, so the industry was created before that year.
Actors	Owner: Pedro Rodella & Sons
Type of Industry	Music instruments: accordion
History of the building	The only record found was its location in Comércio Street, nº 48.
Current Situation	The Comércio Street had its name changed to Nove de Julho Street and the numbers were changed too, so it was not possible to find the exact location of the building.

Location

Map of Araraquara that shows the evolution of the urban grid: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; the red line is the way of the railway. Adjustment: LOURENCETTI, Fernanda de Lima, based on original maps of each date. Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

The street where the building was located.



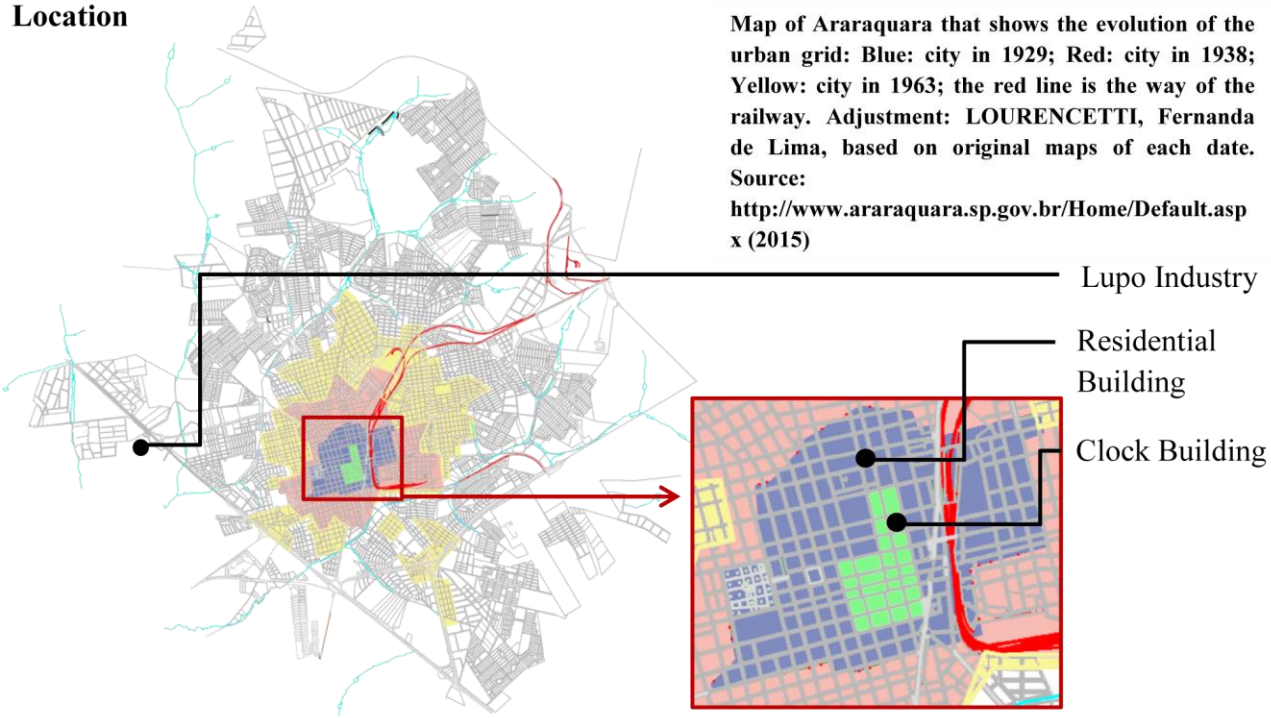
Photos:

Images of the building.

Source: BARCELLONE, Wilson Lopes, 2009, annex.

Industry	**009** - Lupo
Date of Inauguration	1921
Actors	Owner: the italian immigrant Henrique Lupo
Type of Industry	Textile
History of the building	The first building was Lupo's residence. He used two old machines and a bathtub to do the dry cleaner's. In 1937 the production went to a new building downtown, which was amplified in 1955. It changed place again in 1980, it went to beside the highway Washington Luis.
Current Situation	The first building is still residential; the second building is known as the clock building where a Shopping mall is; the third one is still working as the Lupo's industry.

Location



Map of Araraquara that shows the evolution of the urban grid: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; the red line is the way of the railway. Adjustment: LOURENCETTI, Fernanda de Lima, based on original maps of each date. Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

Photos:

1921

1937

2009

2009

Images of the three building.

Source: BARCELLONE, Wilson Lopes, 2009, p. 38/39; http://site.lupo.com.br/lupo/linha-do-tempo/#periodo/1 (2015)

Industry	**010** – Dianda Lopes
Date of Inauguration	1934
Actors	No record was found.
Type of Industry	Textile
History of the building	Edible oil and cotton seeds
Current Situation	The building is located in the Major Dário de Carvalho Avenue, nº 65.

Location

Map of Araraquara that shows the evolution of the urban grid: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; the red line is the way of the railway. Adjustment: LOURENCETTI, Fernanda de Lima, based on original maps of each date. Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

Photos:

2009

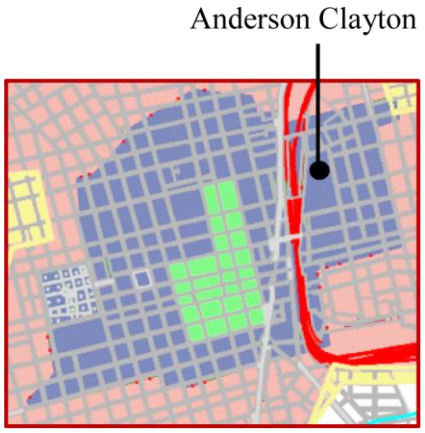
Image of the building.

Source: BARCELLONE, Wilson Lopes, 2009, annex.

Industry	**011** – Anderson Clayton
Date of Inauguration	1930s
Actors	No record was found
Type of Industry	Food
History of the building	No record was found.
Current Situation	The building was demolished and there is a closed condominium in its place.

Location

Map of Araraquara that shows the evolution of the urban grid: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; Green: city in 1880; the red line is the way of the railway. Adjustment: LOURENCETTI, Fernanda de Lima, based on original maps of each date. Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)



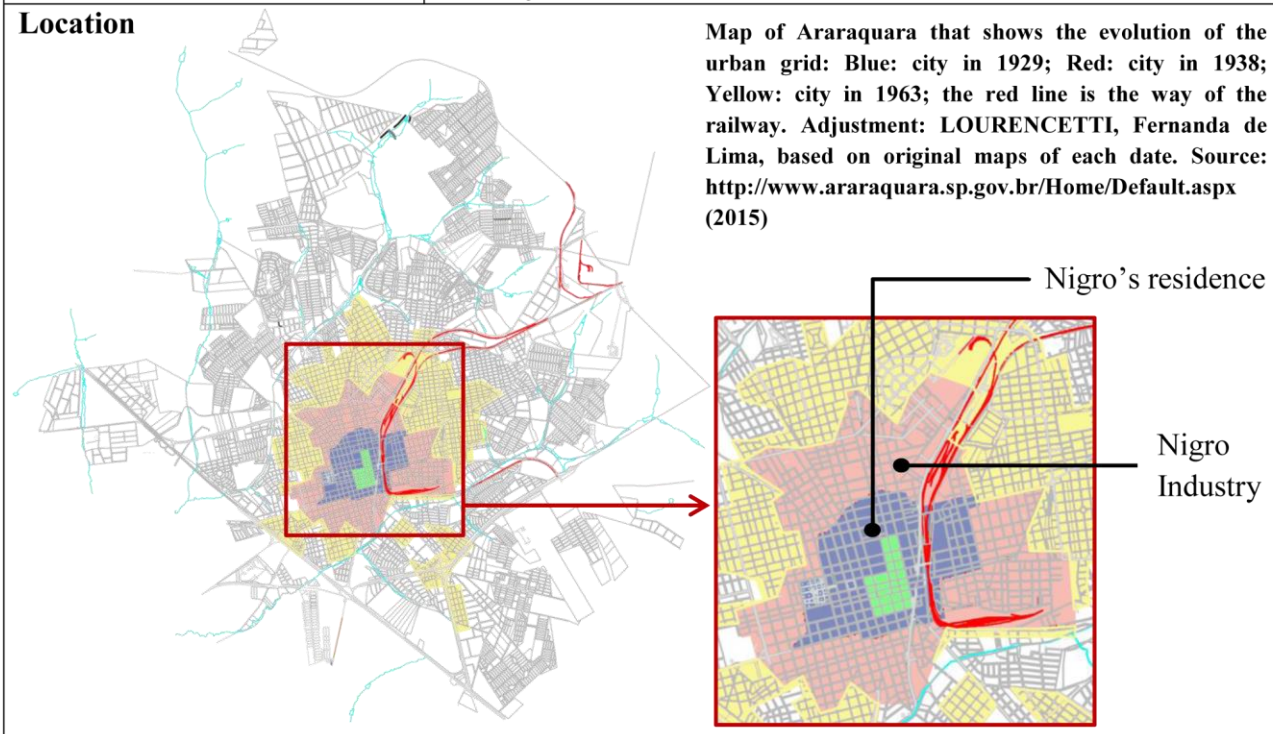
Photos:

Images of the building.

Source: KAPPA Magazine, 2014, p. 22.

Industry	**012** - Nigro
Date of Inauguration	1943
Actors	Owner: the Italian immigrant Arcângelo Nigro and his four sons Franscisco, Pedro, Hugo e Beatriz
Type of Industry	Aluminum
History of the building	The first building was in the yard of Arcângelo's house in the Osório Avenue, nº 184. In 1974 it changed place to Arcângelo Nigro Avenue, nº 166.
Current Situation	The first building became an office, and the second one is still the industry.

Location



Map of Araraquara that shows the evolution of the urban grid: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; the red line is the way of the railway. Adjustment: LOURENCETTI, Fernanda de Lima, based on original maps of each date. Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

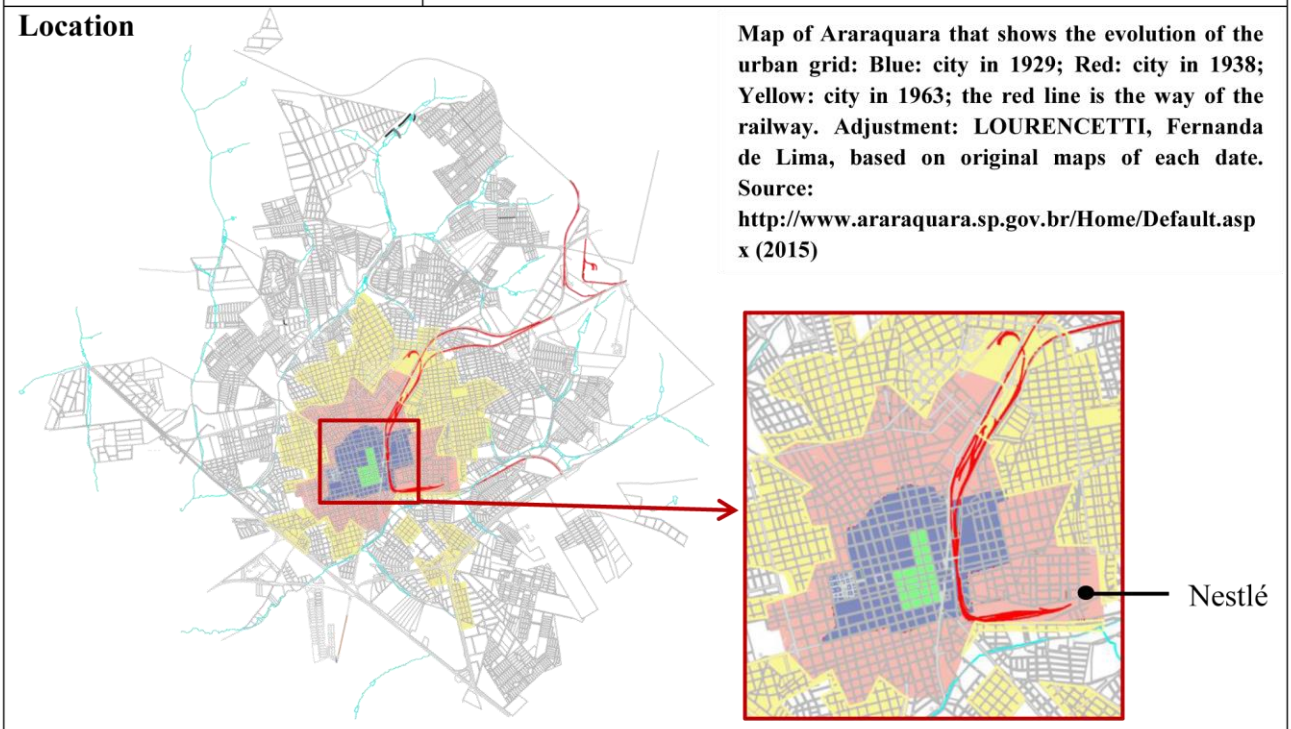
Photos:

Image of the currently building.

Source: BARCELLONE, Wilson Lopes, 2009, p. 40

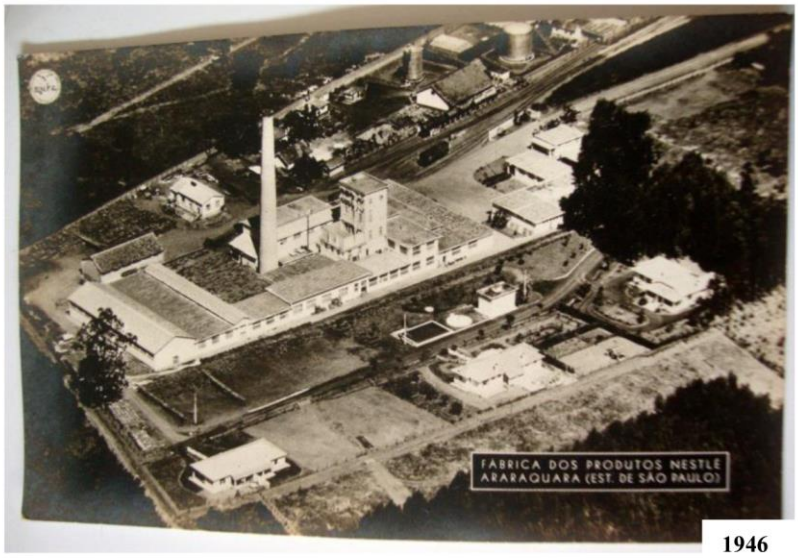
Industry	**013** – Nestlé
Date of Inauguration	1946
Actors	No record was found.
Type of Industry	Food
History of the building	No record was found.
Current Situation	The industry is still working.

Location



Map of Araraquara that shows the evolution of the urban grid: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; the red line is the way of the railway. Adjustment: LOURENCETTI, Fernanda de Lima, based on original maps of each date. Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

Photos:



1946

Image of the building. Source: http://www.nestle.com.br/site/images/historia/1946_1_dl.jpgannex (2015); http://produto.mercadolivre.com.br/MLB-652675057-nestle-carto-postal-fabrica-nestle-araraquara-sp-_JM (2015)

Industry	**014** – Usina Tamoio
Date of Inauguration	1950s
Actors	Founder: Pedro Morganti; Owners after 1941: Morganti's sons; After 1969 the owners were the family Silva Gordo; Thirteen years later the group Corona; Currently there are many owners.
Type of Industry	Sugar-cane
History of the building	The lands had a coffee plantation that wasn't being profitable when Pedro Morganti took power of them, so he started the sugar cane plantation.
Current Situation	The industry still works, but the company town is empty.

Location

Aerial image. Source: Google a maps (2015)

Photos:

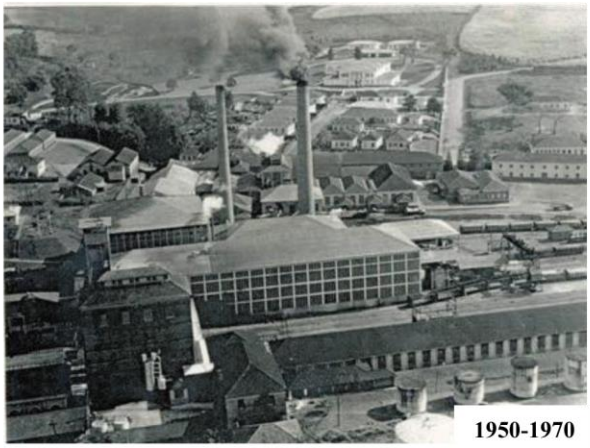


Image of the building between 1950 and 1970.

Source: KAPPA Magazine, 2014, p. 26 annex.

Image of the currently building.

Source: https://www.facebook.com/pages/Usina-Tamoio (2015)

Industry	**015** – Cutrale
Date of Inauguration	1967
Actors	Founder: José Cutrale Júnior
Type of Industry	Food: orange juice
History of the building	No record was found.
Current Situation	The industry is still working.

Location

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Photos:

Image of the current building.

Source: http://www.araraquara.com/noticias/economia/economia_internaNOT.aspx?idnoticia=1002584 (2015)

Industry	**016** – Equipamentos Villares
Date of Inauguration	1976
Actors	The City Hall donated the land to the construction of the industry.
Type of Industry	Infrastructure equipment.
History of the building	In the beining the industry was located in the wareoue of FEPASA, then it changed to Manoel de Abreu Highway.
Current Situation	Currently the industry is working as "IESA Projeto, Equipamentos e Montagens S.A."

Location

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Photos:

Image of the building. Source: http://vfco.brazilia.jor.br/locomotivas-diesel/Villares/VIllares-fabrica-locomotivas.shtml (2015)

Araraquara Urban Building Inventory 2015

Public Space	**001** – Praça Matriz (the old Largo de São Bento/Páteo de São Bento)
Type of Urban Space	Square
Period of the first construction	1812

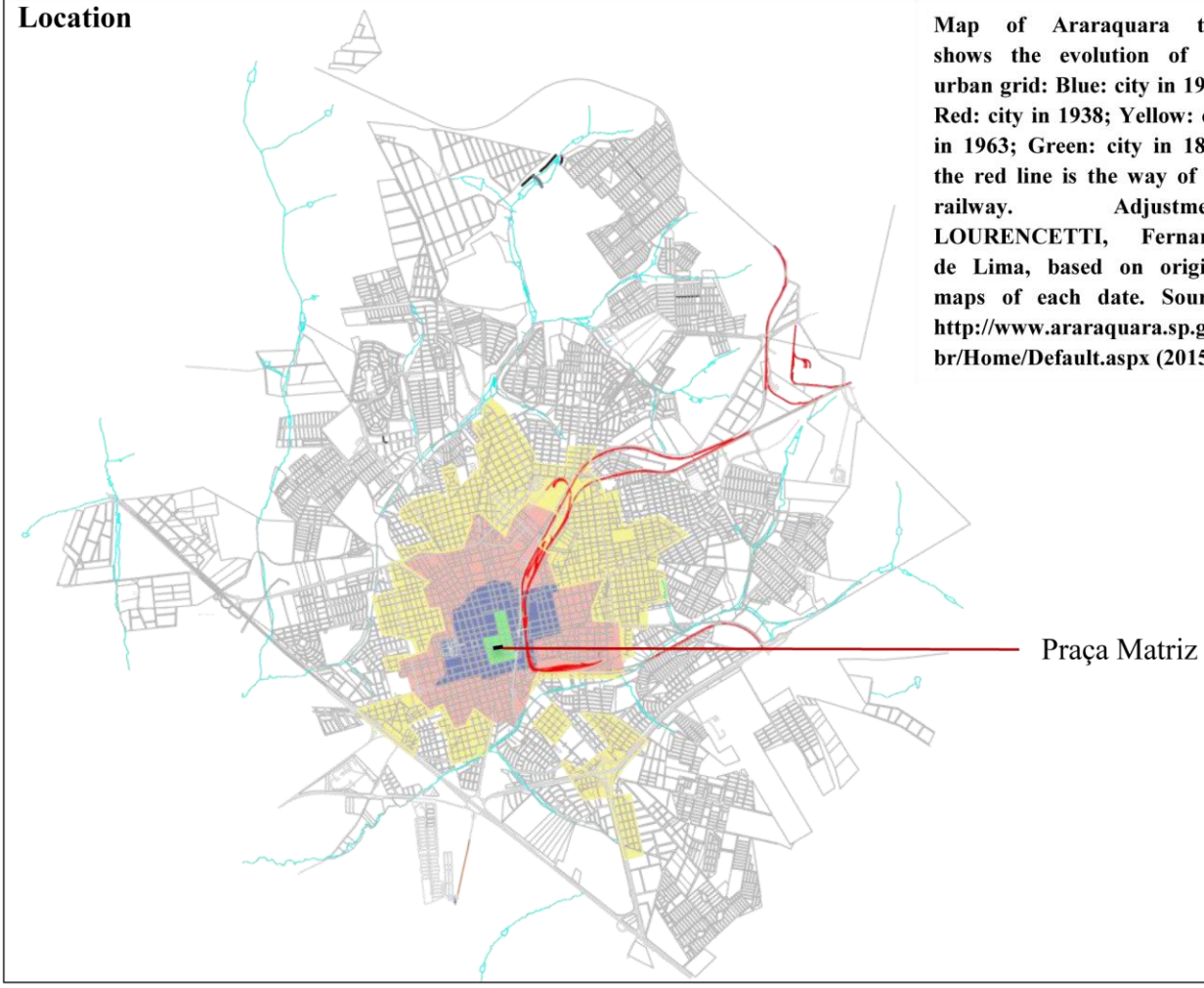
History of the place

The square has 45m x 141m. The first buildings were one church with thatched roof, built in 1817, a jail, small residences, offices and markets. The church was totally destroyed and gave place to a second one, but there is no register about it. A third church was built between 1866 and 1875. In 1887, after the church demolition, a fourth one was constructed between March 13, 1887 and November 13, 1891. It was reformed in 1908 and demolished in 1956. The currently church started to be built in November 12, 1958. In the beginning the garden of the square was composed by eucalyptus and unpaved sidewalks. In 1912 it changed, the "petit pavet" was installed, some imperial palm and "oitis" were planted and the garden design was influenced by the French garden, because it gained a concentric and symmetric design. In 1930 some parking lots were inserted.

Actors

Donor of the land: Pe. Joaquim Duarte Novaes; The first chapel constructor: Pedro José Netto and sons; Who sent to demolish the third Chapel: Pe. Francisco Luciano Pacheco; Celebrated the inauguration of the fourth chapel: Bishop Luis Deodato;; Responsible for the last garden: Eng. Alexandre Ribeiro Marcondes Machado; Who reformed the fourth church and the square: Parish Priest Antonio Cezarino; Engineers of the fourth church: Dr. Belarmino Grossi and Antonio de Toledo Piza.

Location



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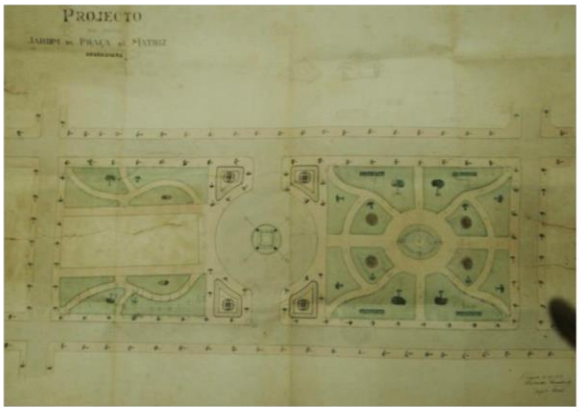
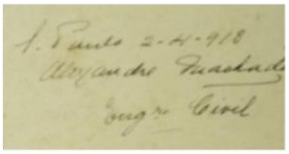
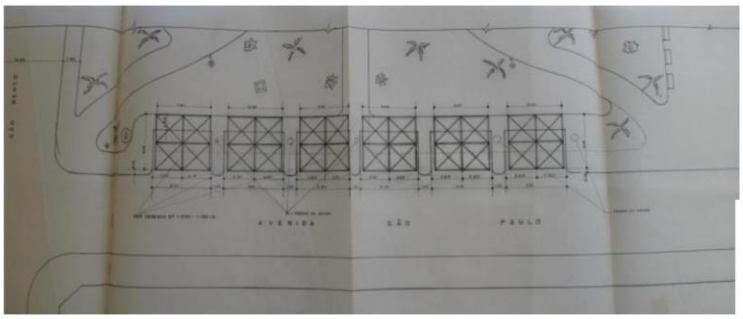
Project planning:





Ground plan from 1918 made by Alexandre Ribeiro Marcondes Machado on the left and his signature on the top. Source: LANÇA, Felipe Almeida, 2009, p. 44-45.

Elevation of the currently church made. Source: LANÇA, Felipe Almeida, 2009, p. 43.



Project from 1963 that represents the insertion of the parking lots. Source: LANÇA, Felipe Almeida, 2009, p. 47

Photos:

1875

1891

Images of the third and the fourth churches. Source: LANÇA, Felipe Almeida, 2009, p. 42/43

1925

2009

Images of the square. Source: LANÇA, Felipe Almeida, 2009, p. 46/47

Public Space	**002** – Praça da Independência
Type of Urban Space	Square
Period of the first construction	1820s

History of the place

It is an area of 85 x 85 located on the fringes of the first patrimony of the city. The land was expropriated and it was called Largo da Boa Morte (Square of the Good Death) or Largo da Forca (Square of the Gallows). These names were given to it because of in that place happened the only death sentence of the city in 1845, after that year, it started to be called Largo José Bonifácio or Largo Coronel Bermano Xavier. In April 5, 1897 the garden received some attention and in January 1º, 1899; the garden was truly inaugurated with a new name, Jardim Público. After 1912 until 1922 the garden had a gazebo with sconces, a central fountain, some sidewalks with the "petit pavet" and others with gravel and lampposts. In 1922, because of the 100 years of independence of the country, the city wanted to do something to celebrate the date, so they rebuilt the square, they put the "petit pavet" everywhere, the Imperial Palm, plants called "baguassu" and the name of the square were changed to Praça da Independência.

Actors

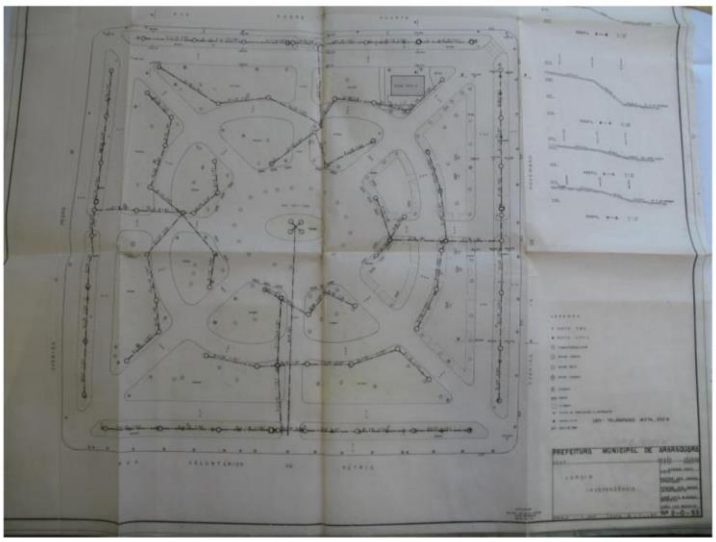
Engineer in 1897: Belarmino Grossi; Investors: Rodolpho Telarolli and more 171 donators.

Location

Map of Araraquara that shows the evolution of the urban grid: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; Green: city in 1880; the red line is the way of the railway. Adjustment: LOURENCETTI, Fernanda de Lima, based on original maps of each date. Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

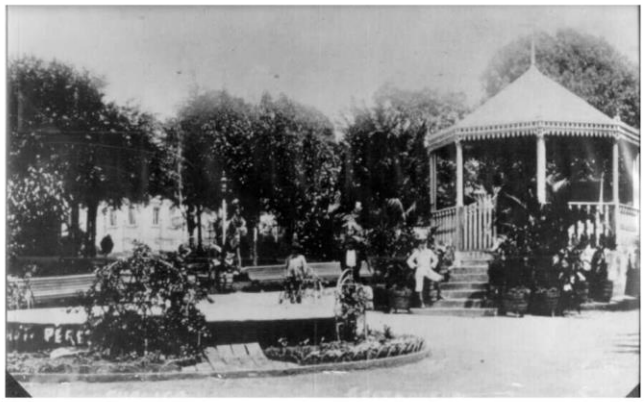
Project planning:

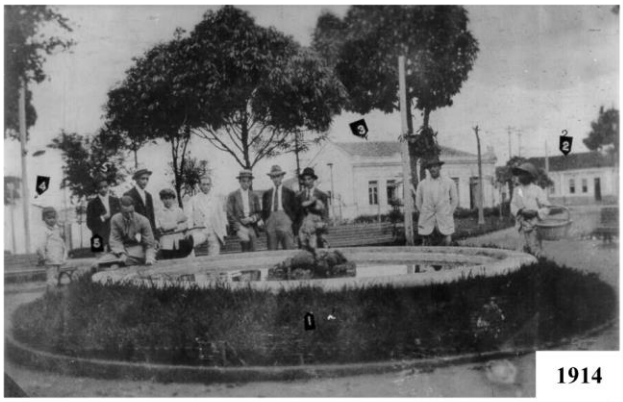
Project before the rebuilt of 1922. Source: LANÇA, Felipe Almeida, 2009, p. 51.



Project of the currently square made in 1970. Source: LANÇA, Felipe Almeida, 2009, p. 52.

Photos:





1914

Images of the square from the period that it was called "Jardim Público". Source: LANÇA, Felipe Almeida, 2009, p. 50/51.

1925

2009

Images of the square before the rebuilt made in 1922. Source: LANÇA, Felipe Almeida, 2009, p.53

Public Space	**002** – Praça da Independência
Type of Urban Space	Square
Period of the first construction	1820s

History of the place

It is an area of 85 x 85 located on the fringes of the first patrimony of the city. The land was expropriated and it was called Largo da Boa Morte (Square of the Good Death) or Largo da Forca (Square of the Gallows). These names were given to it because of in that place happened the only death sentence of the city in 1845, after that year, it started to be called Largo José Bonifácio or Largo Coronel Bermano Xavier. In April 5, 1897 the garden received some attention and in January 1º, 1899; the garden was truly inaugurated with a new name, Jardim Público. After 1912 until 1922 the garden had a gazebo with sconces, a central fountain, some sidewalks with the "petit pavet" and others with gravel and lampposts. In 1922, because of the 100 years of independence of the country, the city wanted to do something to celebrate the date, so they rebuilt the square, they put the "petit pavet" everywhere, the Imperial Palm, plants called "baguassu" and the name of the square were changed to Praça da Independência.

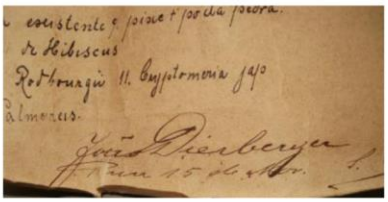
Actors

Engineer in 1897: Belarmino Grossi; Investors: Rodolpho Telarolli and more 171 donators.

Location

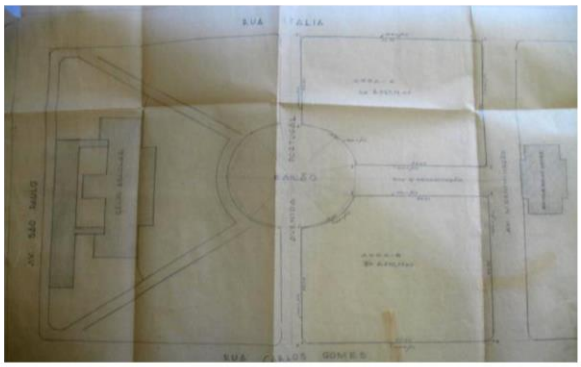
Map of Araraquara that shows the evolution of the urban grid: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; Green: city in 1880; the red line is the way of the railway. Adjustment: LOURENCETTI, Fernanda de Lima, based on original maps of each date. Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

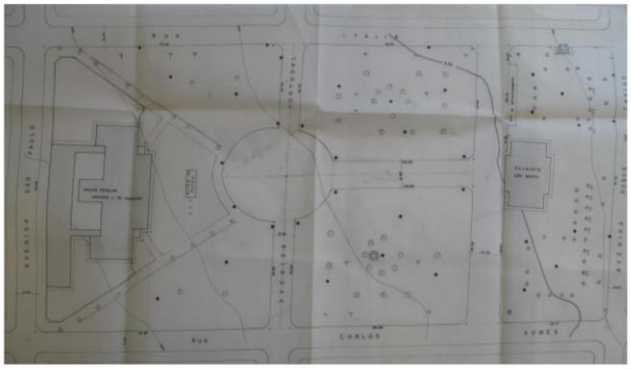
Project planning:



On the top are the specifications of the project and on the right is the signature of the landscape gardener. Source: LANÇA, Felipe Almeida, 2009, p. 55/56.

Project of the garden of Praça da República made by João Dierberger, without the date. Source: LANÇA, Felipe Almeida, 2009, p. 55.





The Project of the left is from 1954 and the project of the right is from 1966. Source: LANÇA, Felipe Almeida, 2009, p. 57.

Photos:

Image of the square. Source: LANÇA, Felipe Almeida, 2009, p. 46/47.

Public Space	**004** – Mercado EFA (Secretariat for Education of Araraquara)
Type of Urban Space	Comercial Building
Period of the first construction	1940s

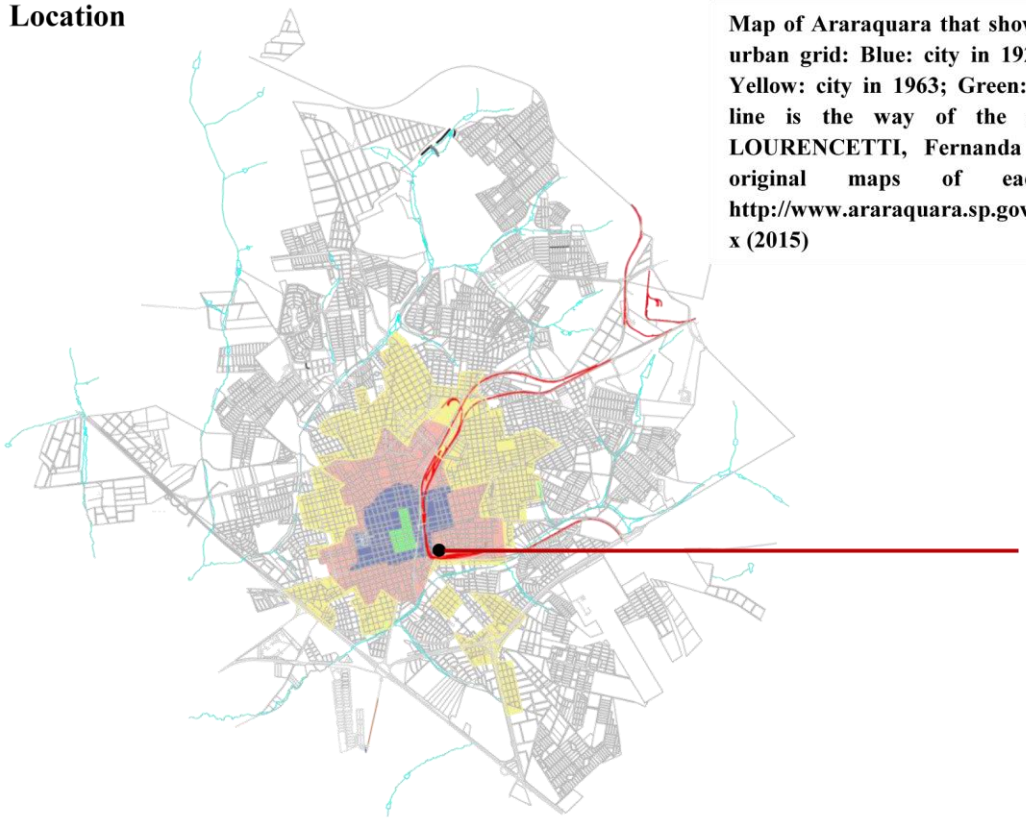
History of the place:

The building was built in the 40s by the Company of *Estrada de Ferro Araraquarense* to its employees. Currently the building is used by the Secretariat for Education of Araraquara.

Actors

EFA – Estrada de Ferro Araraquarense built the Market.

Location



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Photos:

Image of the building, 2009.

Source : BARCELLONE, Wilson Lopes, 2009, p. 30

Unloading Platform, 2009.

Source : BARCELLONE, Wilson Lopes, 2009, p. 30

Public Space	**005** – Associação Ferroviária de Esportes – AFE (Estádio Doutor Adhemar Barros / Fonte Luminosa / Arena da Fonte)
Type of Urban Space	Sports Building
Period of the first construction	June 10, 1951

History of the place:

After the foundation of the *Associação Ferroviária de Esportes* (Sport Association of the Railway), its mayor requested to be built the stadium to the Municipal Mayor. The name was given because of a Governor of the State of São Paulo that had strong connection with the *Estrada de Ferro Araraquarense.* The government spent lot of money to build a whole sport complex. In the 60s the stadium was amplified. After the creation of FEPASA the government was the owner of the place, but in 1973 the board of the municipal soccer time, the *Ferroviários*, took it from the public power; It invested on it, but in 2009 the governent bout it back and it did ore changes.

Actors

The Engineer Antônio Tavare Pereira Lima was the mayor of the sport association of the railway. The government financed the sport complex, but no record was found to know if there were other investors. The *Ferroviários* invested on it for a while, but in 2009 the government bought it back.

Location

Map of Araraquara that shows the evolution of the urban grid: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; Green: city in 1880; the red line is the way of the railway. Adjustment: LOURENCETTI, Fernanda de Lima, based on original maps of each date. Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

Photos:

Estádio Doutor Adhemar Barros, August 22, 1959. Source : BARCELLONE, Wilson Lopes, 2009, p. 31

Estádio Doutor Adhemar Barros, 2014. Source : http://www.skyscrapercity.com/showthread.php?t=316032&page=151

Public Space	**006** – Oficinas EFA
Type of Urban Space	Workshop
Period of the first construction	No record

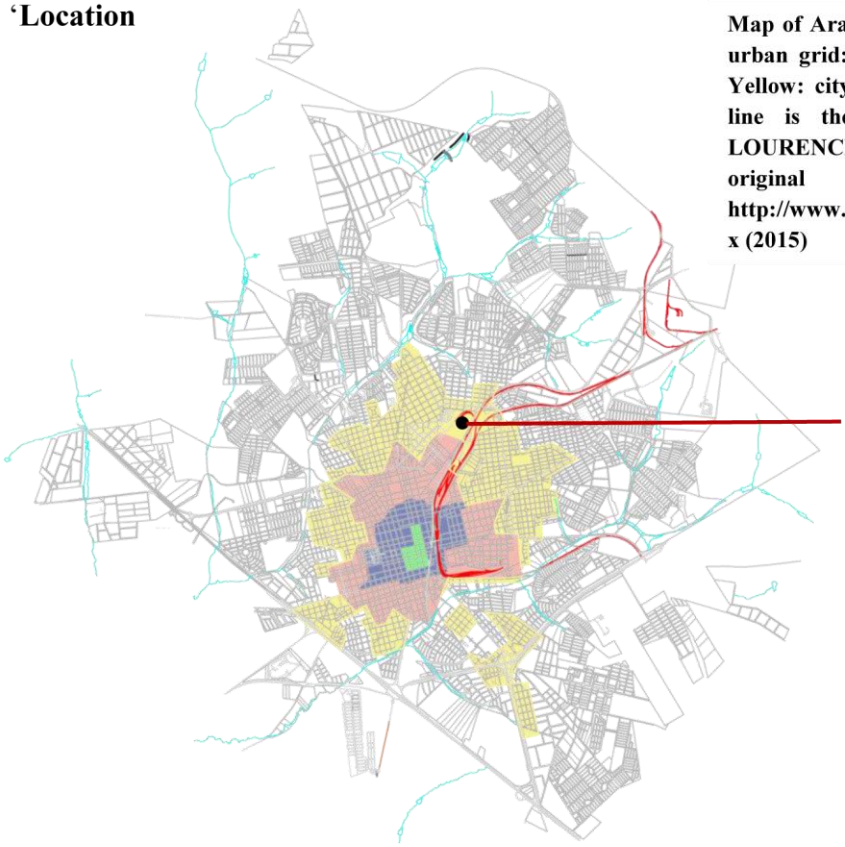
History of the place:

It wasn't found much information about the building, just that it started to produce machines after the government turned to be the owner of the *Estrada de Ferro Araraquarense*

Actors

The government invested a lot after it got the possession of the railway

'Location



Map of Araraquara that shows the evolution of the urban grid: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; Green: city in 1880; the red line is the way of the railway. Adjustment: LOURENCETTI, Fernanda de Lima, based on original maps of each date. Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

Photos: No record

Public Space	**007** – Melusa Clube
Type of Urban Space	Recreation Center
Period of the first construction	1941

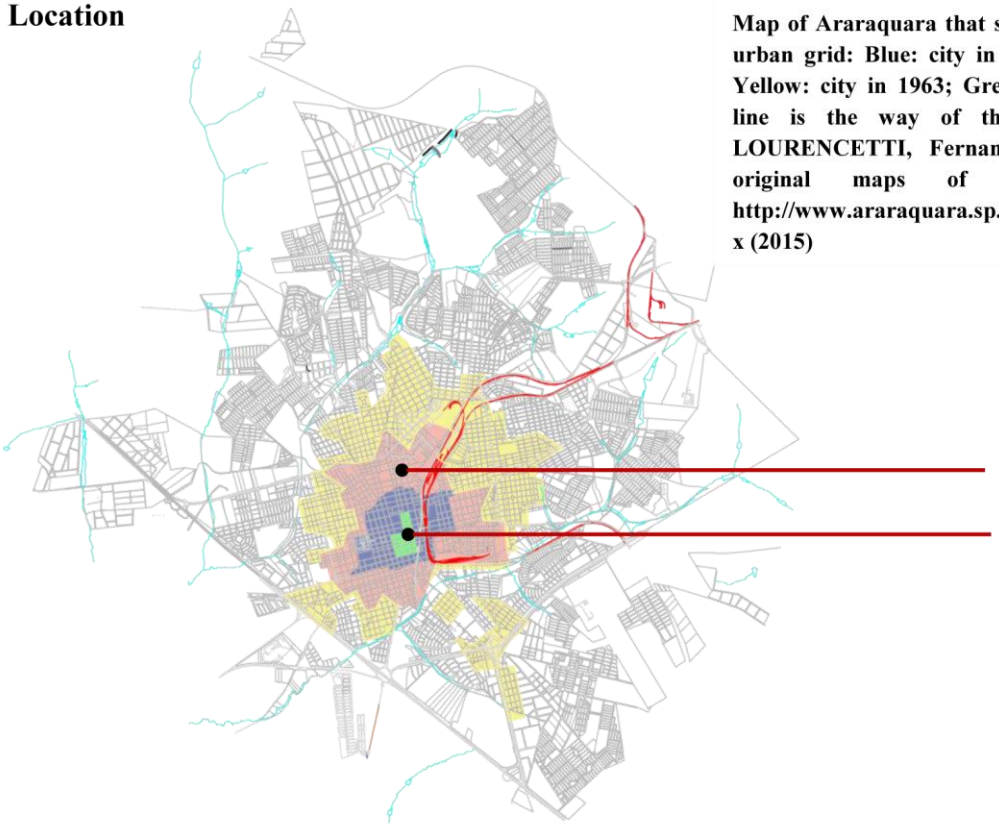
History of the place:

It was a club created by Lupo Industry to its workers. The first building was in the industry building located in the Gonçalves Dias Street, 543, where currently is the Lupo shopping. After some years, the company got the possession of a small farm located in the meeting point between Carvalho Filho Street and the old Monteiro Lobato Avenue, currently called Arcangelo Nigro Street, and the recreation center was built there, where it is currently located.

Actors

Lupo Industry built the recreation center.

Location



Map of Araraquara that shows the evolution of the urban grid: Blue: city in 1929; Red: city in 1938; Yellow: city in 1963; Green: city in 1880; the red line is the way of the railway. Adjustment: LOURENCETTI, Fernanda de Lima, based on original maps of each date. Source: http://www.araraquara.sp.gov.br/Home/Default.aspx (2015)

Photos:

Image of the entrance of the second building of Melusa Clube

Source : BARCELLONE, Wilson Lopes, 2009, p. 39

PART II. COLLECTIVE PROJECT:

VII PROMOTION

Nautical Heritage

Student:

Fernanda de Lima Lourencetti

Essay of the Personal Part of the Collective Project

First Advisor:

Charlotte Marland

September/2013 - February/2014

Second Advisor:

Cyril Lacheze

February/2014 - September/2015

CHAPTER i. INTRODUCTION

"Projet Tutoré" is a task given to be done as a work group during the Master TPTI (Technique, Heritage and Industrial Territory). In the "CADERNET DE BORD PORTEFOLIO" it is described as an additional experience that demands the interaction of students from different cultures to do a report together. However, the costumes and the life experiences are not the only things that influenced this work. In the group, besides the five different nationalities, there were five different fields of knowledge.

The theme given to the group was "Nautical Heritage", a subject which no one had worked on before. To complete this challenge all the group needed to do some researches about what exactly this kind of heritage is. Many different answers came from the studies; they ranged from industrial constructions along the harbor to the aquatic environment.

To narrow the scope of the study, the group considered the countries where the majority of the members would pass through during the course. This means Italy, France and Portugal. In each country it was chosen one city to be studied, they needed to be near the place where the group would stay, since everyone considered the direct contact with the case of study something important. That resulted in three cities, Paris, Venice and Lisbon. All of them have rivers, which had big influence on the economy and on the development of the cities. After some analysis on the rivers of each city, the boat was the object chosen, because in the three cities traditional boats can be found with a big touristic potential.

The Bateaux Mouche was the sample chosen in Paris. This boat came from the city of Lyon during the Universal Exhibition in 1867. It was first used as a commercial boat and as a passenger transport in many rivers in France. The touristic interests started only in 1950 with the creation of the *Compagnie des Bateaux Mouches* by two engineers, Chaize and Plasson. So, the trip along the Seine became an amazing way to learn a little bit about the city of Paris.

In Venice two boats were took under consideration, the Gondola and the Vaporetti. The more similar one to the choice made in Paris was the Vaporetti, a big boat to transport many people at the same time and which has a technology based on mechanical drives. It started to navigate on the Venetian estuaries in 1872 and it came from Lyon some years after the first Bateaux Mouche had arrived in Paris. The city was built around the river, but in this case, not only the navigation which influenced the evolution of the city, the urbanism in its own way influenced the technology used by the boats. The touristic interests started after the emergence of the *ACTV Company* and the economic changes that Venice suffered, which turned the tourism into the new economic base.

In Lisbon the object of study is the Cacilheiros on the Tagus River, where the steam boat arrived in 1821. Many companies were responsible for the ships that connected the whole harbor

zone of Lisbon, but the enterprise that brought the real Cacilheiros in 1982, was founded in 1975 with the name *Transtejo*. The aim of the new boat was to make crossing the river more comfortable, because until that period the transportation of goods and people were together. Between 1981 and 1984 the renovation of the navigation increased the tourism around the region.

The three boats have made part of their cities for a long time, but none of them is considered as a heritage. To conserve a heritage, aren't the historical surveys of each vessel, their influence on urbanization, the emergence of the big transport companies and their technological progress able to give to these boats some cultural value at least on a regional level? Thus, to understand this question, an analysis of what the passengers know and think about these means of transportation was made. After all, it is because of their use that the boats survived for many years.

So, the aim of this group work was to raise the value of these transports. They are daily used, but almost no one knows about their history and their relationship with their space, they are actors taken for granted by the society. In Lisbon, there were found: an artist, Joana Vascolcelos, who used Cacilheiros as a symbol of Portugal in her exhibition at Biennale de Veneza in 2014; and a writer, Luiz Miguel Correia, who wrote about the development of the boat. In Italy, the writer Gilberto Penzo wrote a book explaining the evolution of Vaporetti, he started to put everything that is needed to make the boat become a heritage together, but unfortunately, until now he could not achieve his goal. In contrast with these two cases, the Bateaux Mouche has a commercial-touristic interest so entrenched that no sign of effort was found to make its memories perpetuate.

The heritage values found in these boats are related to their form, technic, space and use. With some data collected from people, between workers and passengers, some immaterial heritages were found too. They are part of collective memories, because many people from different generations remembered of using them, or of seeing them. In some cases people are not able to imagine the landscape without their presence.

Therefore, in this report it will be presented a general idea of how this work was managed and what kind of contribution I gave to it. It is important to have in mind that my undergraduate degree is on architecture and urbanism, and my masters is about the influence of the railway on the development of the cities, so in this research, me and another integrant of the group were responsible for comprehend the integration between the boats, the people and their spatial context.

CHAPTER ii. Collective Project: method and presentation.

At the beginning, to acquire the comprehension of the skills of everyone was very important. First the language influenced in the division of the research, second, the specific knowledge of each one helped to find out how the subject would be discussed, and third, to find a common field in the group decided how the presentation would be done.

Thus, when the purpose was to find things about the three countries chosen, the group was divided by language: three researchers studied about France, one about Italy and the other two about Portugal. After that, the group was divided again, but this time by field of study, which oriented the approach to the theme by three axes:

- The development of the use of the boats;
- The development of the companies and the boats;
- The influence of the boat on the urban environment.

The common thing between the participants was the audiovisual skills, so since the beginning, the idea was to make a documentary. No one had done this kind of work before in Masters TPTI, so to organize the ideas to do it became a big challenge.

Initially the entire group focused on the research about Paris. It was hard to find material about Bateaux Mouche, because almost everything was related with touristic publicities. After the interchange of information, some questions started to be raised. How could we make a visual material that wouldn't become as a PowerPoint presentation? How could we expose the data without create big texts or big continuous narratives? Which will be the language used?

Many different ways were proposed, from the creation of characters of the three countries to tell the public a story, until the "National Geographic" style, based on one narrator for the whole movie. As a conclusion the group realized that, if the intention was to create something audiovisual, it would be necessary to create from its own authorship an audiovisual resource. In this way, it was decided to do some shootings and some interviews with people that could explain the sensation, the history and the importance of our objects of study.

To produce this material the group passed through some difficulties. To make the video more interesting, the interviews should be done in the boat. So here was the first complication, convince the company to let this be done. In Paris the company took some time to answer in the beginning, but after the contact was established, things became easier. They seemed to have all the bureaucracy already prepared to this kind of situation, which differ from the companies from Italy and Portugal. In Italy, first the University of Padua wrote a document asking them the authorization, and then they allowed. In Portugal was even more complicated, because while everything was being

done by e-mail, in Lisbon they refused the first request, then, after some calls and the intervention of the University of Évora, they enabled the shooting.

After get the companies' authorization, one more bureaucracy was left to be solve. The person who speaks and appears in a video needs to agree with its publication. For that, a document was made and each interviewee had to sign it before the recording. This seemed to scare some people, so it was hard to find someone to be part of the project.

The questions were elaborated according to the approach decided in the beginning. They would be made for tourists, residences and employs. For each kind of interviewee were made different questions. Another prerequisite was imposed, until the end of the research, the group didn't decide the language of the documentary, but everybody agreed that would be interesting to try to find in the boat at least one person from each country under study. After a while became even more interest have people from different nationalities that could say if their country has a nautical system like those or not.

Thus, as already said, all this work started in Paris, in the second semester of the course the whole process was repeated in Venice and in the third semester in Portugal. In the last two countries were found people specialized in at least one specific field of the subject. In Italy was found Franco Mancuso, from Padua University, who could explain about the environmental and urban changes, and the writer Gilberto Penzo, who spoke more about the development of the boat. In Portugal the interviews were made with the student Alexandre Ramos, who made part of TPTI too and became specialized on nautical studies. Otherwise, in Paris no kind of expert in our subject was found, but a man who knew about the boat, even without being an expert, but as an old inhabitant of Paris, could speak very well and make an important part of our research.

To provide more visual material, one person of the group filmed the whole journey of the boats and it was decided to do an animation capable to rebuild the evolution of the cities under study to show in a clear way how the relationship between the boat, the river and the city happened. During the third semester with almost all the material ready, the group was able to write a script, and after the edition of the best parts of the interviews, some music and photos were chosen to be used. This was only the beginning of the edition; many sound and image repairs were necessary, the translation of everything to one language to do the subtitles was made and the preparation of the CD cover with a little summary of the video and some technical information was done. The whole work was well divided and everything had the group approvals, what follows the aim given to the "Projet Tutoré".

CHAPTER iii. Individual Project: Reasons, method and difficulties

This chapter will present my personal experience and what I was responsible for during these two years of working group. This project helped me to start my social involvement with all the students from Master TPTI, because I barely spoke French, so it was very difficult to interact with the other students, but the "projet tutoré" was a way that I found to oblige myself to try to communicate. Half of the group didn't understand English very well; I needed to improve my French to be able to expose my ideas and make real part of the group. In the beginning it was exhausting and sometimes there were miscommunications, but with time I could do better.

The miscommunication didn't occur only because of the different languages. As a research proposed to be done in a group, the rhythm of work of each one interfered on the work of the others, which could raise some kind of misunderstanding. In my point of view we didn't have many problems around that. During each meeting we decided a kind of target to be discussed on the next meeting, so everything was done in time and with no rush.

As already said we divided the group in couples. Thus, I worked with Taís Schiavon, since the beginning until the end. In the first part of the research we searched about all the cities that could have a boat like Bateaux Mouche in Portugal. There were found two results, one in Porto and one in Lisbon. When we presented them, the entire group agreed that would be easier to work about Lisbon, because almost all the group would spend the third semester in Évora, so we could go to collect the material without many difficulties.

After the choices were done, my couple and I were responsible for the researching about the urban development of each city, which started from Paris. The idea was focus on the relationship between this city and the Seine. I had already done a work about Paris during my graduation course, so I tried to find a book that helped me a lot, which the name is *Paris Visite Guidee. Architecture, Urbanisme, Hitoires et Actualités,* wrote by Philippe Simon. In this book the author rebuilt the city street by street according to a division of periods, and it was in that moment that the idea of making maps to show the urban grid evolution came to my mind.

I didn't know how transform that colorful map in an animation until one day, while I was working for my thesis, I found a book which showed the expansion of an urban layer using tracing paper. In that moment I showed it to my partner and she said that she would be able to do that as an animation to the documentary, so we showed the idea to the group and everyone accepted.

After some research Taís and I wrote a text to show the others everything that we had found. From this text we took the questions to be made in the interviews. In Italy and in Portugal the proceedings were the same, we always started searching about the rivers participation in the urban development. In Italy we focused on the book wrote by Franco Mancuso, who was our teacher and

took us, with the rest of the students from the 7ª promotion of Master TPTI, to Venice to understand about its industrial heritage and its configuration.

In Portugal our work was more complicated, because the river wasn't part only of one city, but of a whole region, so we started to ask ourselves which would be the best way to work with this. In the end, after we read about Tagus, we realized that even making part of a whole region, the city that connects is Lisbon, and with this conclusion we focused on Lisbon more then on the other cities. This decision started to make the work easier, because we had some classes about the Capital of Portugal, and I participated, with another architect from my class, of an International Competition based on the revitalization of an area of Lisbon, what made me understand the Tagus as a symbol of the landscape of the city.

As a result we had a material to build the maps animations and the texts to make everyone understand the relationship established between the boat and its environment, the city and the river. Below I put a summary of our researches about each case of study. Besides this specific work, I could help the group with the elaboration of the image and voice authorizations, with the translation of all documents and questionnaires to Portuguese and English and in the interviews with people that spoke one of these two languages.

a. Case of study in Paris

Figure 1 – Photo of Bateaux Mouche. Source: SCHIAVON, Taís (2013).

The Seine, with its 777 km, is considered the cradle of the French capital; its first settlement is unknown, it began after the prehistory, but its history started to be clear around 52 a. C., after the arrival of the Romans. Its foundation is dated from the 3th century a. C. and it happened on the *Île de la Cité*, when the name *Lutécia* was given.[317]

Paris was like a common medieval city, its first wall was raised on the right bank of the Seine, before the reign of the King Philippe Auguste, who built another wall on both sides of the

[317] SIMON, Philippe. *Paris Visite Guidee. Architecture, Urbanisme, Hitoires et Actualités*. Edition : Picard/2009, p. 17;

river and the fortification known today as the Louvre. Between 1200 and 1380, the *Saint-Chapelle* was raised and the University of *Sorbonne* was founded.[318]

After 1328, more than 200.000 dwellings were built. During this period, ships had been widely used because they were the only form of communication between the two banks of the river. However, this autonomy was reduced around 1578, after the *Pont Neuf*, first bridge made by rocks, was built. In 1594, during the reign of Henri IV began to be done an urban reconstruction; a new wall was raised, the *Arsenal* next to *Bastille* was rebuilt, *Place Royale (Place de Vosges)* was built and the streets drawing were rectified.[319]

During the reign of Louis XIII (1610), new districts were created, such as some small neighborhoods at the *Île de la Cité*, the *Louvre* was extended and a bridge nearby the *Cathedral of Notre Dame* to connect it to the island of *Saint Luis* was built. In 1635[320], the *Jardin du Roi* was founded on the banks of the Seine; it was a big garden to raise medicinal plants. Its name was changed during the revolution to *Jardin des Plantes à Paris*.

The next significant period to the urban development was the reign of Louis XIV, the King of the Sun, when the sanitary concerns started and the *hotel des Invalides* and the *Hospital de la Salpêntrière* were built with similar distance from the Seine, what mark the symmetry of the city drawing.[321] A new master plan was launched, boulevards were created to replace the walls, restaurants, game rooms and other kinds of entertainment emerged, the avenue of the *Champs-Elysées* was built and the city extended its boundaries as a discontinuous periphery mixed with the field.

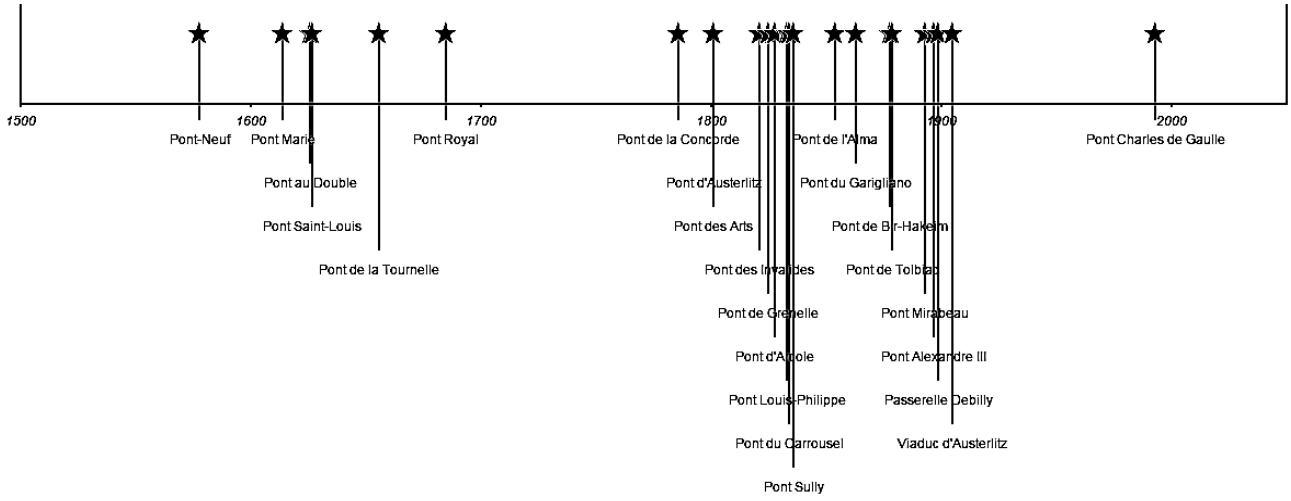


Figure 2 – Chronology of the bridges that cross the Seine in Paris. Source: http://chrono-frise.fr/gener_frise/3542/Les-ponts-de-paris (2015)

[318] SIMON, Philippe, p. 19;
[319] *Idem*, p. 27;
[320] *Idem*,
[321] *Idem*, p. 35;

It can be noticed that until that moment there were few bridges crossing the Seine. Thus, vessels were essential to establish this connection. In 1662[322], the first public transportation moved by animal traction was created in Paris, which started to compete with the water transport and made the Seine lose its importance in the urban central area.

The boat lost its value as a daily transport, but the banks of the Seine continued to change. Between 1752 and 1770[323], on the right bank of the river next to *Palais des Invalides* a military school was built and on the opposite side, nearby *Champs Elysees* and in the end of the *Tuileries Gardens*, the *Place de la Concorde* was built, which emerged from a statue of King Louis XV. To connect both sides of the river the *Concorde Bridge* was constructed in 1791. Around 1780, the same houses situated along the bridges of the Seine were destroyed; this was done because of the concern about hygiene and space control.

In the beginning of the 19th century[324], Napoleon Bonaparte ordered the construction of a network of canals to divert the navigation of the central part of the city to the peripheral areas such as *Saint-Denis*. With this intervention he had intended to decrease the boats concentration of the Seine.

The Seine was the scenario for many changes. *Georges - Eugène Haussmann* made a whole new urban plan designed by channels and axes. Besides all his interventions that are very well-known, part of his urban review previewed to join the banks of the Seine to areas on the outskirts of Paris. His reforms were made between 1853 and 1870, but the last boulevard of his authorship was built in 1927[325]. Haussmann tried to improve the mobility of the city trying to ease the concentration of vehicles of the city center, so the integration between the banks of the Seine had been largely improved by the construction of several bridges, which decreased the dependence on boats to cross the river and that declined more after the expansion of the railways.

In 1867[326], there was a *Universal Exhibition* in the region of the *Champ de Mars* and the *Trocadero*. The connection of these areas was made by the bridge of *Lena*. It was for this exhibition, that the *Bateaux Mouche* went to Paris. There were many other *Universal Exhibitions* in the city during its history, and many regions along the Seine were influenced by them.

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[322] BILO, David Ramos. *Paris [3 Estruturas Urbanas]*. Faculdade de Ciência e Tecnologias da UC, Departamento de Arquitectura, Prova Final de Licenciatura em Arquitectura. Orientada pelo Arquitecto António Portovedo Lousa. Fevereire/2009, p. 29;
[323] SIMON, Philippe, p. 35;
[324] BILO, David Ramos, p. 29;
[325] *Idem*, p. 15;
[326] SIMON, Philippe, p. 73;

From 1929, the logic of the automobile and railways dominated the mobility frame; they made the interconnection between the axis of the river, the concentration of the environment of the city, and the outlying areas easier. Since then, the stations started to be part of the urban grid.[327]

After the Second World War, in 1949, *Jean Bruel*[328] promoted the revaluation of the Seine creating a special fleet of boats used to develop the tourism in the city. During the 1950s and 1960s, the use of the car rose demands for many studies to restructure the banks of the Seine to relieve the traffic.[329]

Currently, projects are developed to increase the use of the Seine, which consist on the interruption of the flow of vehicles on its shores. In 2009, a project named "Rive Droite" was launched; it provided to the area between the *Hôtel de Ville* and the *Pont de Port de l'Arsenal* the circulation of bikes and pedestrians. This project was implanted and it was completed in 2012.

The project "Rive Gauche"[330] was based on the same principals. Since 1990, the division of the Seine area in three districts: *Austerlitz*, *Tolbiac* and *Massena*; was under discussion. So the region between the *Alma Bridge* and the *Musée d'Orsay*, was restructured and after that it received several restaurants, coffee houses and floating gardens.

b. Case of study in Venice

Figure 3 – Vaporetti. Source: http://www.pixstel.com/actv-vaporetto_urlb1118.php (2015)

Many people believe that the urbanization process of Venice began during the period of "barbarian invasions", between 300 and 800, as a mark of the transition between antiquity and the Middle Ages. "Lagoon of Venice" was a place for where some fugitives went to be safe. In this

[327] BILO, David Ramos, p. 23;
[328] http://www.bateaux-mouches.fr/ (2013)
[329] BILO, David Ramos, p. 51;
[330] http://au.pini.com.br/arquitetura-urbanismo/176/paris-revi-gauche-urbanismo-sustentavel-116364-1.aspx (2013)

context, this Adriatic region became an important mercantile port since Venice turned to be a "port-city", combined with an urban organization of multiple centers.[331]

As an isolate region, the islands provided many challenges as a reason of their instability and location. Many draining techniques were created to make the place inhabitable, besides that, the needs of material to build made this city be a nautical pioneer. Thus, Venice emerged as an important trading post, the city needed to grow, the output of this situation was found in the middle of the advance of the waters between the existing Islands. The inhabitants had developed a system of drainage and construction, so little by little the shortening of distances between the Islands was reached.

At this moment, on the 9th century, the spatial context of Venice was composed by approximately 65 small islands that over time gained new channels around the "Grand Canal". These changes opened space for the promotion of commercial activities like fishing and extraction of salt. The salt pans were responsible for the first constructions.

There are some theories about the real development of Venice. One of them is that it started with the growth of the regions of *Torcello*, *Cittanova* and *Malamocco*. *Torcello* was considered a strong commercial center in 10th and 11th centuries and a bright shipbuilding. In the other hand, the second theory is based on the set that Venice started to develop in the region of *Rialto* and *San Marco*,[332] at a time when the economic hegemony of the other regions began their process of stagnation and exodus of the population.

Anyway, the pieces of land are separated by a network of small channels connected to the central canal, which is responsible for the dispersal of the flow of the islands. The disposal of this archipelago of 118 Islands and 177 canals gives form to a polycentric city.[333] Venice is based, in its essence, on the mobility through the water, which turned the urban and the navigation in two inseparable fields.

The Islands gradually developed from the reduction of flooded spaces caused by the drainage, in this way, the current composition of the lagoon is the result of a continuous process of changes that began 6 000 years ago. It is currently characterized by a long arc that extends from *Sile*, in the North-East to *Brenta*, in the South. It has a maximum length of 55 km and the variable width between 8 km and 14 km, an area of approximately 57 000 hectares. The connection with the Adriatic Sea is obtained using a cord formed between two fixed points on the mainland and two islands, *Lido* and *Pallestrina*. The water exchanged between the lagoon and the sea occurs through

[331] MANCUSO, Franco. Venezia è una città: come è stata, contrutita, e come vive. Corte del Fontego, c. 2009, p. 07;
[332] Les Cahiers de Science & Vie – Les Racines du Monde. Édition: X-XV siècle. *Venise les chantiers d'exception d'une cité bâtie contre l'eau,* p. 23;
[333] http://pt.slideshare.net/iceteased/veneza-urbanismo-3716876 (2014)

the movement of tide according to three openings: *Pass the Lido, Passes from Malamocco* and *Pass the Chioggia*.

The economic and urban dynamic of Venice reflects the diversification and the adaptation of its islands, new channels were opened, expanded or buried, new Islands had been created or restructured and, in this context, the means of transportation needed to follow the mutant land. In 1973, imposed by the Law 171, the progress of the expansion of the continent on the lagoon and any other prior change around the structuring of the channels were declared absolutely prohibited, because the natural environment started to answer these interventions in a very dangerous way, in 1973 the water came up 1.94 m compared to the sea level.[334]

As a way to contain the water was created the MoSE "experimental electromechanical module" construction, which was stimulated during the 70s[335], after the disaster described above. It is composed by an artificial system of defense consisting on mobile valves used as a way to promote isolation between the Venetian Lagoon and the Adriatic Sea during the movement of the tides. Installed since 2003[336], the project contains many criticisms about its high cost of installation and maintenance, but until now it was the best way to contain the problem.

Around the *Grand Canal*, Venice islands are interconnected by channels of different sizes, in addition to the aquatic environment some terrestrial routes to establish internal connections were planned, so some channels were covered by land. This attitude began as a concern about hygiene.

In the south of Venice, the *Giudecca Canal* acts as an extension of the *Bacino di San Marco,* which directed the flow of the lagoon to the mainland and to the harbor area, currently this route is characterized by the dispersion of large ships and a massive presence of industry.

The variation of boat types in Venice arises from all the urban changes and the economic conditions. Vaporetti, gondola, traghetti are among the types of ships used as an urban transport. Among them, the gondola is the best one to move around the whole city because of its shape, which allows the boat goes through all the channels with much more agility. Its first drawing created as a simple boat started to receive special treatment, and because of that, the gondola became a famous symbol of the city. Currently the gondola is used as a tourist attraction.

Other mean of transportation used not only by tourists but by inhabitants of the island is the traghetti, it is characterized as a vessel similar to gondola, but users normally stay stand. This boat has an operating system in town composed by the “traghetti inside", responsible for the internal communication of the city and by the “traghetti outside" responsible for the connection to the

[334] Les Cahiers de Science & Vie – Les Racines du Monde, p. 195;
[335] MANCUSO, Franco, p. 136;
[336] http://www.water-technology.net/projects/mose-project/ (2014)

mainland. Currently there are 05 points operating on the Grand Canal, they are less expensive than gondola and more efficient to make the cross-channel.

Another important "urban boat" is the Vaporetto, generally used to transport passengers between various points of the Grand Canal, Giudecca and the lagoon. Along the Venice urban evolution, the ship undergoes changes in its structure. Currently it is considered as an important mean of transportation widely used by tourists and residents, it is considered less expensive than the gondola too and as a good alternative to know the tourist points of the city.

Therefore, in the heart of the landscape composed by water, islands and insular mountain, Venice suffered many changes in function of its economic activities, its urban context, and recently, its industrialization. The water as an intrinsic part of the urban grid caused the huge use of boats as mean of transportation, an element that would never disappear from the city, because it is the main responsible for the mobility of Venice.[337]

c. Case of study in Lisbon[338]

Figure 4 – Cacilheiro. Source: http://www.transtejo.pt/pt/quem_somos/historia.html (2015)

The Tagus River importance was developed during the period of the big maritime discoveries; it had influences from Phoenician, Greek, Roman and Islamic. These civilizations intended to enlarge their territorial domain and to spread the fame of their wealth and power. The estuary of the river Tagus, the second biggest navigable river in the Iberian Peninsula, is an access point of the ocean to the mainland. He is responsible for the connection between the Portuguese region and Spanish territory.

Lisbon was the main destination of the explorers of the Atlantic; they usually went down the Tagus by many kind of transportation system. Among them were use animals and small vessels.

[337] MANCUSO, Franco, p. 23;
[338] All the informations were got from the same book, Subterranean Lisbon, Electa, Museu Nacional de Arqueologia de Lisboa, Capital da Cultura '94.

The use of these nautical transports decreased after the implementation of a railway system which connects Lisbon and the areas in the interior of the continent. So its influence happened in many different historical periods and reached many other cities like Gênes, Venice, Pisa, Barcelona, Cadix, Seville, Bourges, Anturpia, Amsterdam, Copenhagen, Lübeck and Hamburg.

In Portugal, Tagus River was the departure of naus and caravels, two kinds of boats characteristics of Portugal during the period of its territorial discoveries. Some natural events like the wave that devastated a large part of Lisbon's bank, affected the urban development of the region. In Lisbon, the boats became a symbol of the medieval city. Historically several ships had used the Tagus River to promote commercial activities, because for a long time there wasn't another way to cross it.

The Tagus' estuary, considered as the third biggest estuary from the Iberian Peninsula, remarked the attention of settlers, once that the force exercised by the tides facilitates of the entrance of ships to the harbors in a strategic position, which helps enrich the marine fauna, which allows the deployment of many industries, principally the fishing industry. Thus, the construction of, par example, Belém tower, in 1521, and Bugio tower, in 1578, elements of protection of the estuary, represented the beginning of changes on the area. They modified the natural process of tidal inlet and siltation of some regions, hindering the navigation on some parts of the river.

The network of cities were established by the Romans, thus, the urbanization of Lisbon was stablished by the Roman Empire based on the fishery and on the laws came from the capital of the Empire. Nevertheless, in general, along of the Iberian Peninsula, between the 5th and 8th century the occupation by "Sueve" and "Visigoth" was responsible for the abandonment of some cities. In the 8th century, the Muslims arrived (791-1146) and they remained in Portugal until the 13th century, letting many urban changes that still make part of the city.

The Muslim had closed Lisbon Roman via a powerful wall which surrounded the medina and Alcazar. The new area had fifteen hectares, which were densely populated. The harbors next to the Roman's wall became two "suburbs", Alfama, a territory dominated by navigation, fishing and gold panning, and a territory located on the west of the Tagus, where the culture were based on "bourgeoisie" costumes. The expansion connected Ribeira Port and the agricultural area inside the city. After a while the area known as "Baixa" conquered through successive discharges, extending into the periurban agricultural area became an area of vegetable gardens, responsible to fill the valleys of Valverde in Benfica and Borratém at Arroios. This landscape was reconquered by the Portuguese in 1140, and after that, maritime and naval service became an important activity for the dynamics of Lisbon and the estuary.

A period of crisis reached both rural areas, causing a big immigration of workers from rural areas to the cities, which provided its expansion and, consequently, increased the necessity of security. To solve it, it was built a third wall known as Cerca Fernandina. Later, the maritime discoveries of the 15th and 16th centuries gave rise to a new phase of urban development. Port cities were the most benefited from the expansion of trade. Lisbon, Porto, Setúbal, Viana do Castelo or Avieiro are examples of that.

In the 16th century, the city of Lisbon became the capital of Portugal; it ordered international trade in spices from the East. So, In the Felipino period (1580-1640), Lisbon continued its urban expansion and the two towers mentioned before, Belém and Bugio, started to strengthen the links between the river and the ocean.

D. João V (1706-1750), with the wealth of Brazil, enriched the capital and ostentation of the nobility and the cleric. In this moment the region between Alcántara-Calvary and Belém developed and the "Aqueduct of the free waters", responsible for the significant increase on the volume of water provided to the city, were built. Right after this period, an earthquake (1755) made to be necessary an urban reconstruction made by Marquis de Pombal. The “Pombaline” revitalization contrasts among the historical remains of Lisbon, because this reform followed the principle of rationalization of spaces. However, Lisbon currently presents a different positioning of its harbors; they were previously centered in the region of Belém, which were the point of departure for naus and caravels.

The economic importance of the Tagus is not based only on the transposition of products, but also in the industrial development that began between the 18th and 19th centuries. In 1981 was found in Cacilhas, a "salt pan" which eventually strengthen the link between the region, the river and the sea. Tagus turned to be a region of spawning, exploitation of salt, mining, fishing, a suitable space for the installation of many activities, like shipbuilding and the production of handicrafts.

Until the beginning of the 19th century, when the construction of the port of Lisbon began, caused by the power of the tide, it was common to have small vessels being destroyed in the attempt to get closer to the coast of Lisbon. So, it was common see ships stoping in ports of other part of the estuary next to Lisbon, where the port conditions and the behavior of the estuary were better and safer than those found on the Bank of Lisbon.

In such a case, the Cacilheiro, Catamãraes and other types of boats, crossed several times the Tagus estuary. Currently they are used as transport for tourism and public transportation; they are seen as the most viable mean of transportation. Even with the construction of the bridge 25 de Abril (1966), the longest bridge in Europe, and of the bridge Vasco da Gama (1998), people still depend on the nautical transport.

CHAPTER iv. Research and goals

To present the aim of our research it's important to have some explanations about the option given by the program of "Projet Tutoré". It was possible to choose some different approaches to talk about one specific theme, which in this case was already presented as "Nautical Heritage". So, the options were:

- Give a heritage value;
- Create an virtual museum;
- Create an survey;
- Give esthetic or cultural value;
- Make an exhibition.

The documentary will be able to give a heritage value as the same time it can be used as a virtual exhibition. The research started with the purpose of collecting material capable to show what the boats represented to their space context and to their population. The technology evolution were studied but not with the intention of reveling a big participation in the technical field.

Throughout the data collection the interaction between the boat and the city, and the daily use of each object of study, made us believe on their value. Like this, the goal passed to be more related with the final product of the project. The documentary should be able to make people understand their real value. They are not only a mean of transportation; they are part of the landscape, of many memories.

Bateaux Mouche, Vaporetto and Cacilheiros are symbols of their cities. They are internationally known; many tourists around the world used them. They have an immaterial value that need to be known too. The comparison between them is not to give to one more importance than to the other, but it is made to stablish a link between objects from different places that had the same renewal of use, which made them alive until today, because they would probably disappear if they weren't necessary or if anyone had find them a profitable use.

CHAPTER v. Conclusion

Summing up, the Collective Project was given to be done in group under the coordination of a tutor. During the meetings, like mentioned before, the research was guided by the tutor, but the responsibility for all the decisions was of the students. Like that, the responsible for the group needed to know about all the choices made by it to be able to moderate the work, while the researchers had to take the final decision.

The theme was unknown, so to narrow its scope, the group tried to link their knowledge with the subject to elaborate a case of study. The way of division of work, which was made in function of the language and skills of each participant, increased the purpose of the "Projet Tutoré", because it put in evidence the importance of each integrant during the research.

The first activity gave by the tutor was to make everyone know each other, and it was very important, because the dynamics provided the group a way to find out how the best way to work together was. Unfortunately, this first contact was the only one able to make the students understand what to work in a group is. With the passing time there was no other group dynamics to improve the ability of different ways of discussion or division of work, which could made the students understand the importance of the interaction between them and of the exchange of experiences. If more exercises like that had be given, some misunderstandings could be avoid and could make the students learn more how to deal with the differences and how to manage the different ideas to conciliate them.

This lack of experience became evident in the end of the work, in the moment that the video started to be done. The edition of the documentary needed to be done just by one person, because of the techniques and because the group was already divided in different places. Even trying to let some images and interviews ready to be organized in sequence, it is hard to be sure that the entire unite will work, and sometimes unexpected things happen, so the group needs to be prepared to face it to not overload just one integrant. Besides that, the final result need to be an agreement between all the researchers, or the video will show more about the knowledge of the person who finalized it. Thus, the person that is doing the job can't do it all by himself, and coordinate this is not that easy if the person doesn't know how to deal with the collective idea and how to pass the information of his schedule.

However, since the beginning the group considered important the relationship of all integrates with the research. In the meetings the investigation was guided to be delightful to everyone. To present the work as a documentary was one of the influences of this concern, because it was a way of presentation that stimulated the entire group even knowing about the difficulties.

This depth relationship with the work made the group get closer in the personal life. For me it was the first contact with people from the course, which made me practice the French and improve my way of dealing with someone from another culture, place, and with other religion and conducts. With the passing time I was obliged to know how to separate the friendship from the work, because sometimes the personal relations can influence in the work and this can hinder the results.

The discussions made during the development of the research gave us new points of view about how to deal with a heritage. Besides that, it made us understand the importance of an historical review to understand and increase the value of an object. This value needs to be acknowledged by people to make the esteem of it be able to turn it in a heritage. The banalization of an object on the part of the society can be the result of the way that it is used. The historical analysis need to be well done and exposed to show people that the object has more than what them can see to be preserved.

Some interviewee didn't agree with the value that a simple mean of transportation can have, but some of them face the boats as part of their lives. There are two different points of view that need to be under consideration and that need to be developed in the analysis to make the work able to defend, or not, the valorization of something.

The Bateaux Mouche navigates on the Seine for more than 140 years. Many tourists face it as an important way to know the city, because the river is an important part of Paris. The Seine influenced a lot the development of the city; its urban drawing evolved the banks of the river and one side almost followed the growth of the other. The boat is part of the landscape; it is a kind of link between the monuments that were built close to the river. To some inhabitants the boat can tell the city history and even if the boat is treated as a transport for tourists, it's hard to imagine the city without it.

In Venice the rivers and channels influenced even more the development of the city, which made the watercrafts be the most important mean of transportation. The Vaporetto is part of this history, it arrived a year before the law that forbid big interventions on the "water roads". However, even with this prohibition, some infrastructures of the city were influenced by the boat, and the boats' technology was influenced by the city to decrease the damages that it could do to the rivers' and channels' banks. Vaporetto makes part of the landscape of Venice, like the Bateaux Mouche in Paris, for more than a hundred years and even after it suffered many changes and adaptations, it was never took out of the city scenery.

The same analysis can be applied on Cacilheiro in Portugal. Even being the youngest boat between them, it is part of the nautical legacy of Portugal. The country had a big influence of its

nautical transports on its development. The Cacilheiro was one of them, which started with the transportation of goods, like salt, and of passengers. The reduction of its use to transport only people didn't minimized its importance. It is a live representative of the past that can be put in evidence by studies like the one made by Luís Miguel Correia, in his book *De Lisboa à outra banda. História de Vapores, Cacilheiros e Catamarães do Tejo*. But, as already mentioned, to be recognized as a heritage the object needs to pass through a huge system of evaluation.

Therefore, all the knowledge acquired during the Collective Project made clear the difficulties to understand, and make people understand, the value of something. The divulgation of the information obtained about the object is very important to start to improve its value. This understanding made the idea of the video becomes more important, because the documentary need to be able to achieve more than experts, it need to make the society understand.

Thus, more than a research, the "Porjet Tutoré" was a life experience. Learn how to deal with similar people is already something difficult, which means that interact with people from different cultural is even more complicated. This experience improved my skills on the frame of discussions, mileage ideas, respect and general knowledge. They are the kind of acquaintance that are useful in our personal and in our professional lives, and they are skills that norally people take for granted, but they depend on the person's ability of communication and the opportunity to improve it.

ANNEXE

a. Image and Voice Authorization

In this Act, and for all purposes in law permitted, I expressly authorize the use of my image and voice, for this purpose and for free, constant in pictures and films resulting from my participation in the project of the Université Paris 1 Panthéon-Sorbonne, the Università di Padova and Universidade de Évora, written below:

Program: Master TPTI
Project Tittle: Patrimoine Nautique
Researcher (s): Ghaya SLIM; Valeria BACCI; Tais SCHIAVON; Pauline BOURGASSER; Jaosoa Jeannot RAZAFINDRAMA; Fernanda DE LIMA LOURENCETTI
Tutor: Cyril LACHEZE
Main objectives: preparation of a scholarly documentary focusing on the valorization of the nautical heritage and the comparison of it in three different countries: France, Italy and Portugal.

The images and the voice can be displayed: in the partial and final reports of here described, audio-visual presentation, in academic publications and disclosures, always making the record due credit.

The student is authorized to perform editing and assembling the photos and film, conducting the reproductions to what he thinks that is necessary to make the work understandable, as well as producing their communication materials, always respecting the purposes described.

Nom:_____
Adress:_____

I authorize the group “Projet Patrimoine Nautique” , Master TPTI Paris 1, to film me for their documentary "au fil de l'eau" which will be released in a private setting.

Date_____

_____

Signature

b. Questionnaire Paris

- Passengers:

1. Why did you chose the Bateaux Mouche Company? Do you know its history?
2. Why would you know a city by its rivers? What are the advantages? Do you think that ride by bout is an important way to know the city?
3. Is there some service similar to this one in you city? Which one?

- Workers:

1. Which is the period of the day with more visitors?
2. How many years are you working here? Can you tell us if the number of passengers had increased over the year?

c. Questionnaire Venice

- Gilberto Penzo:

1. Histoire des vaporettos, avec ses changements essentiels (techniques, sociaux, culture)
2. Quel est le lien entre la population et les vaporettos? Est ce qu'il a toujours été le même au fil des années?
3. Quelle est la fréquentation touristique des vaporettos?
4. L'impact urbain des vaporettos ; problemes de la lagune, des constructions spécifiques (des batiments, mais aussi dans la forme des bateaux)
5. Pour vous, quelles sont les differences entre la gondole et les vaporettos
6. Pensez vous que les vaporettos doivent etre conserves en tant que patrimoine nautique? Si oui, pourquoi? Si non, pourquoi?

- Franco Mancuso:

1. Qual´è la relazione tra i canali e la città di Venezia?, Come questa relazione ha influenzato l´ubanistica e il sitema costruttivo della città?
2. Prima dello sviluppo industriale di Venezia, la navigazione può essere considerata lo strumento principale per la crescita dell´economia della città?
3. Le imbarcazioni furono realizzate adattandosi alla città? Come è avvenuto lo sviluppo tra la città e i suoi edifici come per esempio l´Arsenale e il Ponte di Rialto ?
4. L´introduzione di altri mezzi di trasporto utilizzati sulla terra ferma , come il treno e le automobili, hanno oscurato l´importanza dei canali e il loro utilizo?

5. Come i mezzi di trasporto influenzano la vita quotidiana della cittá e qual´è il rapporto fra i cittadini e i mezzi di trasporto?
6. I mezzi di trasporto della città come per esempio la Gondola e i Vaporetti possono essere considerati patrimonio culturale?

- Workers
  a. What time of day tourists prefer to go on a tour at the lagoon?
  b. How many years are you working in the company? Does the number of users have increased this year compared to last one?

- Passengers
  - Tourist or resident?

TOURIST

  a. Why did you choose to visit the city with vaporeto? Do you know its history?
  b. Is there any advantage to know the city by its canals? Do you consider this an important way?
  c. In your country is there some similar transport? Which one?
  d. What difference do you see between the gondola and vaporeto?

RESIDENTES

  a. How often do you use vaporeto? Is this your main mean of transportation? Is there any annual, monthly or weekly discount?
  b. What is the difference between the lines? Do you consider the there are enough?
  c. Do you have a vessel for everyday personal use?
  d. What is the vaporeto to you?
  e. What is the difference between the gondola and vaporeto?
  f. Can you say what the difficulties in the lagoon to use vaporeto are?

d. Questionnaire Lisbon

- Alexandre Ramos
  1. Como foi estabelecida a relação entre o rio, as cidades que o circundam e o barco?
  2. O desenvolvimento tecnológico do barco ocorreu conforme o desenvolvimento que a região vinha tendo ao passar dos anos?

3. No início da industrialização, o barco era uma das principais ferramentas utilizadas no desenvolvimento econômico da região?
4. A utilização de outros meios de transporte, como carro e trem, influenciaram no funcionamento do sistema fluvial?
5. Porque este barco atingiu um interesse turístico?
6. É interessante reconhecer este meio de transporte como patrimônio? Por quê?

- Passangers:
  1. Why did you choose to use the Cacilheiros? From where did you come and for where are you going?
  2. Do you know the history of this boat?
  3. Do you think that this works fine?
  4. Which are the reasons of knowing the city by the river? What are the advantages? Do you think it is an indispensable form of meeting Lisbon and its surroundings?
  5. Is there the same kind of transportation in your country?
  6. Do you think that this boat can be considered a heritage?

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PART III. GENERAL CONCLUSIONS

This thesis fits in the Master TPTI frame because it is based on the knowledge provided by the course in its two years. Technique, heritage and landscape of industry were the three basic concepts used to develop this report. Thus, the study program gave support to clarify its purpose, problematics and methodology. The course developed the subjects gradually. Like that, while the research was being done, the classes presented new sources, virtual programs and many different ways to report about the same subject.

The exhibitions, texts and works gave during the first three semesters were a good way to practice the writing, the way of interpretation and the sense of logic before the final work. These skills are the basic ones in the academic world, in fact, they are important in all careers, because the person needs to know how to listen and how to express theirselfs. In the last semester, when was demanded an article to be written, it got clear that a researcher needs to know how to write in different situations. An article can't be written with the same structure as a thesis, and an article for a magazine is not the same as an article to be published on the internet.

So the speech and the writing are two strong tools in a professional life. They are the apparatus to promote a work and a professional. Besides that, the sense of cognition gets developed during the evolution of these skills, which helps the researcher to evaluate which is the relevant information to be used. In a course of three particular fields the investigator should be able to select the information that will be useful to the report and to let the thesis opened to be accomplished by other researches about the same subject in different fields, but without losing its real purpose.

Like that, even with no intention of preserving a specific technical system like the seminars presented in Paris during the first semester, the study based on the railway, urban and industrial development provided to this research some information about technical systems used over the years. This knowledge increased the importance of the railway, because this mean of transportation influenced on the arrival of some of these systems and their renewal without deflect the subject.

Besides that, to indicate the existence of these procedures can arouse some researchers' interest, which means to help in their conservation, which was another purpose of this research. In Brazil people still deal with the industrial heritage as a building to be preserved, so to see in person how this works in three different countries opened new horizons in the studies of this kind of heritage. To acquire this knowledge and to take it to Brazil can provide some possibilities of changes to the Brazilian industrial heritage management, which can arrange new discussions able to help in a global frame and generate new ideas of how to innovate the ways of preservation and conservation. Some countries, like Italy, are already facing some problems with the cost of their

heritage, because the buildings need some interventions to support the new necessities and to conserve what existed before.

The management of the landscape and its organization are based on different kind of techniques. They were studied in the two parts of this report: the Personal Project and the Collective Project (Projet Tutoré). Even dealing with two kinds of means of transportations in different places, they have some characteristics in common, like the importance that they had in the development of the territory and of the economy. The most evident difference between them is that the cases of study in the Collective Project are frequently used as transport, which make them an important instrument to the tourists, while in the Personal Project the transport doesn't receive passengers anymore and the transport of good just stopped to be transported by the railway station under study.

The subjects seemed to be similar, but the results of each report weren't the same. The Personal Project exposed a case which is not well-known, not even in the entire State of São Paulo, in the other hand, the Projet Tutoré exposed three different boats that are internationally known. Thus, the difference mentioned before created two divergent situations. The heritages can be classified as transports, but each one needs to be studied carefully, as a particular case. Even if the comparison was made between the boats presented in the Collective Project, they can't be preserved in the same way; they provide to the city the same kind of service, passenger transport, but with different intensity of number of people and tourists. This conclusion matches with one of the intentions of the seminars of the course, which showed the plurality of the industrial heritage.

Thus, the most important subject to this research was the study about an industrial heritage, which included the landscape evolution, and made the knowledge acquired during the seminars based on this subject influences more directly on the work than the classes about specific kind of technical systems. The understanding about industrial heritage management in other countries was relevant in the creation of a way to avoid that the railway negligence in Brazil becomes hackneyed. To have different scenarios about the industrial heritage showed that it doesn't exist only one way of conservation, and that the case of study can be analyzed through its material and its immaterial value.

In the case of this research to understand the concept of heritage in the frame of the industrial territory was important, because the intention is to increase the value of the railway in the spatial development of the State of São Paulo and of the city of Araraquara. The principal idea was not to preserve only the train station or the material used in it, the idea was to go beyond these material things and understand the whole history of the railway to identify its influence on two different scales: the city and the State, which need to be completed by studies about the other cities of the rail lines.

During the TPTI, many researchers presented their work, which gave some examples of different ways of thinking and understanding a case of study. The presentation of different methods seemed to amplify the field of study of this report, but until the last semester the research turned to be more specific. So from all the different points of view that the course provided until the beginning of the last semester, only some of them were used to give support to this research. The others were used as different ways of analyzes.

One of the most important characteristics of the TPTI, that differ from other masters and that was important in the whole process, was the exchange of experience and knowledge between different people and places. In this point the "Projet Tutoré", which is consider as a complementary work, helped the researcher to learn how to deal with people. A researcher needs to establish many personal contacts, which means to deal with different people from different areas and to absorb from them the biggest number of important information to connect the facts of the research. Thus, the experience obtained from this project developed new ways of thinking, new ideas and some reasonable ways of how to deal with people.

Other works were made in group, they were smaller, but they provided the same kind of difficulties as the "Projet Tutoré" in a smaller scale. The competence of "working in group" is important to a professional career; the enterprises are searching it in people to put them in almost all the high positions in the company as supervisor and coordinator for example. As the technical work, the ability of deal with different people provided with different knowledge, culture and ways of working should be practice.

Besides that, the "Projet Tutoré" was given as a new field of study for all the students, but in the end the group could analyze the subject dividing it in fields already known between them. This influenced in the personal project because in the end it was a study about another kind of transport that influenced on the territorial development of some regions, so the ideas and new ways of thinking in this area helped on the development of the principal project.

Another important knowledge developed in this Master is the necessity of understanding many languages. Develop this skill helps the researcher be able to deal with a bigger number of sources. Even with some difficulties, to know the basic vocabulary and grammar of two other Latin languages can improve the ability of the student to learn and understand other similar languages. This skill is essential to prepare the student to face the globalization and its exchange of knowledge. Two years is not enough to make people become an expert in any of the languages given during the course, but it arouses the interest of the student to develop this skill.

The different languages are a part of the abilities obtained in the Mater TPTI that is essential to let a researcher prepared to do a doctorate. To improve the historical research, the methodology,

the concepts of heritage and the knowledge of what exists in this field makes the student more prepared to work with it in many different ways. But it is interest to notice that the notion about management given during the course, even it being applied in the preservation field can help the student to be more professional in different areas, because some principals, like the one mentioned before, the “working in group”, are indispensable.

To live in many different countries makes a person be prepared to adapt himself in many kind of situations. The bureaucracy, the way of life, the food, the management of time and many other details of the daily life change from a place to another. To be able to follow these changes made me understand better the others. So I believe that after the TPTI experience I am more prepared to face different conditions not only in the professional life, but in the personal life too.