

Business, Science and Politics

The Behring Institute for Experimental Therapeutics
in Rio de Janeiro and the Latin American Market
for Biopharmaceuticals

Negócios, Ciência e Política

O Instituto Behring de Terapêutica Experimental no Rio de Janeiro
e o mercado latino-americano de produtos biológicos

JULIANA MANZONI CAVALCANTI

Programa de Pós-Graduação em História das Ciências e da Saúde

Casa de Oswaldo Cruz/FIOCRUZ

Avenida Brasil, 4.036, 4º andar, Sala 416, Rio de Janeiro, RJ, 21.040-361, Brasil

jujumanzoni@gmail.com

MAGALI ROMERO SÁ

Casa de Oswaldo Cruz

Fundação Oswaldo Cruz

Av. Brasil 4036, 4º andar, Sala 410, Rio de Janeiro, RJ, 21.040-361, Brasil

magali.sa@fiocruz.br

ABSTRACT This article analyzes the creation of the Behring Institute for Experimental Therapeutics (Instituto Behring de Terapêutica Experimental) in Rio de Janeiro in 1932 as a subsidiary of the German company Behringwerke and its confiscation by the Brazilian government in 1943. Approaching with a transnational perspective we interpret this venture not solely as German, although it's strong tie with German cultural diplomacy of the period. Beginning in and through Rio de Janeiro the commercial expansion plan for Latin American proved

Received: 22 Feb. 2017 | Revised by the authors: 15 May 2017 | Accepted: 28 May 2017

<http://dx.doi.org/10.1590/0104-87752017000300006>

Varia Historia, Belo Horizonte, vol. 33, n. 63, p. 659-705, set/dez 2017

to be timely for preserving the consumer market during the World War II when Germany was barred from trading with the continent. The role of Brazil in giving a tone for the biopharmaceutical market in the region contrast with the most historical work on its relations with Latin American countries. Finally, we intended also to highlight how scientific and business interests could merge, but just presented as an initiative of improving scientific knowledge.

KEYWORDS Germany, pharmaceutical industry, scientific relations

RESUMO Este artigo analisa a criação do Instituto Behring de Terapêutica Experimental, no Rio de Janeiro em 1932, como primeira filial da firma alemã Behringwerke na América Latina, e seu confisco pelo governo brasileiro em 1943. Mediante uma perspectiva transnacional, interpretamos esta iniciativa não apenas como alemã, apesar de sua forte ligação com a diplomacia cultural alemã do período. O plano de expansão comercial para a América Latina começou e foi feito a partir do Rio de Janeiro, e provou-se providencial para preservar o mercado consumidor durante a Segunda Guerra Mundial, quando a Alemanha foi impedida de comercializar com o continente. O papel do Brasil em dar um tom ao mercado biofarmacêutico da região contrasta com a maioria dos trabalhos sobre suas relações com países da América Latina. Por fim, pretendemos também destacar como os interesses científicos e de negócios poderiam se fundir, mas serem apresentados apenas como uma iniciativa para o melhoramento do conhecimento científico.

PALAVRAS-CHAVE Alemanha, indústria farmacêutica, relações científicas

The history of the subsidiaries of the German company Behringwerke (BW) illuminates a large portion of how research and the market for biopharmaceuticals was developed in the 1930s and 1940s in Latin America, as well as events in the history of the German pharmaceutical industry during the period preceding World War II. Analysis of the markets for the synthetic and biological pharmaceuticals BW produced is an invaluable resource for understanding the relationship between

science, industry, and politics. Investigation of the correspondence and reports sent to the company's headquarters in Marburg, Germany, showed that the Latin American branches were essential to the commercial expansion plan and indispensable for preserving the consumer market during the World War II when Germany was barred from trading with Latin America. In this article, we will examine the history of the Behring Institute of Experimental Therapeutics (Instituto Behring de Terapêutica Experimental, IBTE), which was established in Rio de Janeiro in late 1932; this particular institute was the first in Latin America and was strategically important to the founding of other institutes in Buenos Aires (1935), Bogotá (1939) and Mexico City (1939). We will also cover a portion of the history of Bayer's subsidiary in Brazil, Chimica Bayer Ltda., since this was where the administration of IBTE and other biomedical companies was concentrated.

By analyzing the history of the Latin American branches of the Behringwerke firm, we also intend to contribute to the field of transnational history. The mobilization that took place for the foundation and operation in these countries displayed the geopolitics of the period and how it affected the development of the company's business. The branches in Latin America show us how ideas, peoples and objects flow across national borders through a transnational network created by scientists, diplomats and businessmen. The parallelism of center and periphery or national and international loses its importance when dealing with a transnational agent like this firm whose interests do not correspond obligatory the same of its country of origin. In this way, Behringwerke played a transnational role in politics, economics and science between Germany and Brazil as well among a complex group formed by Germany, Latin American and USA.

The purpose of this article, therefore, is to investigate the activities of Behringwerke's subsidiary IBTE in Rio de Janeiro from its founding in 1932 until its confiscation by the Brazilian government in 1943. This will allow us to contribute to studies that address the initiatives undertaken by the great powers that fought over economic, geopolitical, and cultural influence during the period between wars, since the strategies

this company used to establish itself in the Latin American market for biological pharmaceuticals were in line with the more general guidelines of German cultural diplomacy. In addition, because IBTE produced important medical products, we intend to add to research that sheds lights on the relationship between scientific knowledge and commercial interests which are present in the pharmaceutical industry.

Despite the fact that we are addressing the history of a company, we will not orient ourselves according to the perspectives of the history of business, although at some points we will use related bibliographic sources. The history of business appears to face difficulties similar to those often addressed in the history of science, such as segmented interpretations which divide the object into political, social, and economic dimensions. At least until the 1980s in Brazil, the field of the history of science tended to follow the division between internalist and externalist perspectives in approaching the development of science. This was followed by a questioning approach which views scientific practice as a human activity impregnated by the social values of a certain society, location, and time. Just as scientific objects and concepts are seen as “black boxes” by the public, companies can also be viewed in this way by historians and scientists.

What came to stand out in the history of companies is the nefarious side of unfair competition, human exploitation, and corporate corruption, and the evolution of organization and administration of companies was generally not approached as something which was in line with general historic changes (Kobrak, 2000). Meanwhile, in the history of science the positive side was reinforced, namely the improvements that resulted from scientific work, without a critique of the organization and practice of science. While the stereotype of the businessman is negative, typically depicting a selfish and exploitative individual, the stereotype of the man of science is positive and usually represents an altruistic and righteous person.

Returning to the similarities between objects, we see that both scientists and entrepreneurs do not often reveal their thoughts on their attitudes and decisions, which creates difficulties for the historian but

also opportunities to explore the reasons behind the activities of these subjects. Scientific publications and administrative reports are documents which were formulated in order to present a ready idea without contradictions, which serves as a support for subsequent attitudes. It is, however, important to be aware of the marked difference between the two areas regarding the nature of science and of business. Science is not a legal entity, and consequently does not have to follow the procedures established by the legislation of the country where it operates. Even though science adapts to local practices where it is practiced, its practitioners may be more independent than businessmen. In the view of business historian Christopher Kobrak (2002, p.xii), companies are more related to national history than to the individuals which they represent, since they are legal entities; this is exemplified in the alterations imposed on Schering when the National Socialist government interfered in its administration. The contemporary historiography addressing German firms during the Third Reich questions the participation of these companies in atrocities and in their support for a military regime by showing that allying with this government was crucial for their survival. This fact only redeems them in part, since they are not absolved of responsibility for financially profiting from the activities undertaken by the Nazi regime, many of which developed by by scientists and administrators from these companies. (Hayes, 2001).

In this article we will adopt this perspective regarding IBTE's collaboration with the Nazi government because we want to show that saving the company was one of the priorities of its administrators while they simultaneously were forced to collaborate with the actions of the National Socialist regime. As argued by Kobrak, understanding the values that underpin national cultures is a good way to understand the history of companies. This point is certain, since we are analyzing an object during a period of strong nationalism prior to World War II. Although BW expanded internationally and also adapted to its surroundings, we cannot forget that it culturally belonged to a society that sought to resume a leadership role in its former activities.

BW was created by the German scientist Emil von Behring in 1904 to manufacture antidiphtheritic serum, and soon expanded its manufacturing plant to other biological medical products. Although it did not patent its process for producing sera, Behring was recognized as its inventor and won the 1901 Nobel Prize for medicine (Homburger, 1993, p.58; Throm, 1995). In the 1920s, the manufacture of biological products for human and animal use was at its peak as a reflection of gains made during World War I as well as the growth of the animal industry, particularly the meat trade, which required biopharmaceuticals to prevent and cure infectious diseases in animals. The invention was also facilitated by the near-absence of regulations controlling experimentation involving humans as well as animals. For human diseases, the quantity and variety of products was expansive: vaccines, serums, proteic or bacterial preparations, organ extracts, and blood. All of these substances were developed and tested from the end of the nineteenth century and came into broad use during World War I, culminating in the 1920s when they also became part of targeted therapies against chronic and non-infectious diseases (Eckart, 2003; Löwy, 2005; Cavalcanti, 2013b).

We can state that at that time there was a culture of using animal substances to treat diseases and deficiencies, just as today there is a culture of synthetic drugs. Culture here means a set of values, norms and practices that are created, shared and standardized by a group or groups of people (Langdon; Wilk, 2010). The foundation of Pasteur and Serumtherapeutic Institutes at the end of nineteenth century institutionalized the use of biological products on the treatment and diagnosis of human and veterinary diseases. Although smallpox vaccines were older than new biological therapeutics, it did not lead to the existence of a culture of using this kind of products, which had been settling along the first decades of the twentieth century after the development of the method of potency evaluation of the antidiphtheric serum (Cavalcanti, 2013b, p.35-38). Subsequently it was adapted to evaluate other biological therapeutics as well as synthetic (Gradmann; Simon, 2010, p.03). Serum therapy was responsible therefore for the establishment of a culture of

biological products due to its standardization by a method of potency evaluation. After Second Industrial Revolution practices of standardization became the new pattern of production and signified the new status of efficacy, achieved through a normalized process of production, that is, a process operated by specific norms and rules (Jürgen, 1999, p.189-94). A broad array of new therapies e prophylaxis based on elements of animal origin like organotherapeutics, blood transfusion, vaccine therapy and protein therapy also helped to settle the culture of using animal products (Cavalcanti, 2013a).

World War I also led to great changes in all spheres of the invention and production of biological medical products, in European countries as well as many Latin American nations. In Brazil, the most significant consequence was the interruption of imports of various products, which led to the creation of private laboratories to meet demand (Benchimol; Teixeira, 1994; Ribeiro, 1996). The flourishing market for biopharmaceuticals and the absence of specific legislation regulating human experimentation permitted a range of new sera, vaccines and other preparations to flood the Brazilian market (Cavalcanti, 2013b).

In Europe, the conflict affected production in several countries, since Germany was not only a major supplier of biopharmaceuticals but also retained the dosing standards for essential products such as anti-diphtheric serum (Cockburn, 1991; Mazumdar, 2010). With the war effort, BW greatly increased its revenue when it became one of the major suppliers of anti-tetanus, anti-gangrene, and anti-dysenteric sera and vaccines against typhus and cholera for the German government. In the 1920s, even though the company underwent significant structural enhancements and synthetic drugs began to be produced (and to threaten the hegemony of biopharmaceuticals), the economic crisis during the immediate post-war period and the formation of cartels played roles in reducing the company's income (Homburger, 1993, p.67-70).

Since it lost most of its contacts after World War I and its main German competitors in the field of biological and synthetic products (Hoechst and Bayer, respectively) had already belonged to a consortia since 1904, BW found itself isolated and powerless to compete on equal terms. In need of

economic stability and new contacts abroad, the company had no other option but to join the largest consortium of chemical and pharmaceutical industries in the world, Interessengemeinschaften Farbenfabrik Aktiengesellschaft (IG Farben) in 1929 (Homburger, 1993, p.72-74).

IG Farben was created in 1925 after the merger of the German companies BASF, Bayer, Hoechst, Agfa, Griesheim, and Weiler-terMeer. Since 1916, these companies, along with the firms Kasella and Kalle, comprised a corporate partnership known as Litte IG, and was very much the result of initiative by the head of BASH, Carl Bosh. This new corporation became the most powerful entity in the German chemical industry, as well as Europe's largest corporation and likely the fourth largest in the world behind Standard Oil of New Jersey, General Motors, and United States Steel. While the name IG Farben ["dye"] indicates the company acted in this segment, the name does not do justice to its composition, since it was not concentrated only in the dye industry and was not a federation of independent companies, much less a single corporation. In the definition of Hayes (2001, p.15), it resembles a "vertically and horizontally integrated concern or combine, encompassing one core firm and more than fifty semiautonomous dependents."

In the 1920s there was a configuration of political and economic associations in the United States and England which brought together politicians, academics, and especially entrepreneurs to analyze and organize strategies for protecting the national economy without neglecting international ties. Participation by academics was required to inform the businessmen with their theories and intellectual experience, while they also renewed their scientific theories according to the practice of the entrepreneurs. In the United States, for example, the Council on Foreign Relations became, in the words of David Rockefeller, the "marriage of brains and money" and "the pantheon of the world of business, politics, finance, the university and the American press" (Dreifuss, 1986, p.33). A similar association only appeared in Germany in 1952, in the wake of the creation of several international organizations that would shape the new world economic order, with the formation of the Europäische Vereinigung für Soziale Entwicklung und Wirtschaftliche (Dreifuss, 1986, p.55).

Although we cannot compare the performance of IG Farben with these American and British organizations from the 1920s, since they were associations for the discussion and planning of political and economic strategies, we can consider this German corporation as a planner and executor of a portion of international German economic policy in this period through the formation of cartels (Hayes, 2001, p.34-35). The concept of organic elites proposed by the Uruguayan political scientist René Dreifuss to analyze the formation of these transnational economic and political entities can be applied to the administrators of IG Farben since they were involved in economic, political, and cultural strategies in planning the company's international expansion, while at the same time improving the capitalist production system (Dreifuss, 1986, p.21-31).

IG FARBEN'S INTERNATIONAL EXPANSION PLANS AND THE ROLE OF BEHRINGWERK

Although its companies already had representatives in various countries around the world, IG Farben began a more intensive international expansion at the end of the 1920s after it failed to obtain shares in British, French, Belgian, and Swiss companies and began to promote cartels. Difficulties in international trade demanded the development of new strategies such as cooperation in the field of research and production with foreign companies like Standard Oil of New Jersey, with which it shared some of its patents, and the establishment of subsidiaries of their companies in foreign countries (as was the case with the Behring Institutes). However, the international bargaining power of IG Farben was definitively crushed with the arrival of the Great Depression; the consortium was only able to survive because of its dyes and pharmaceuticals. The balance between its domestic sales and exports was necessary for operations, since these areas were dependent and their importance varied according to the political and economic circumstances (Hayes, 2001, p.33, p.38, p.43, p.46).

During this period, although the pharmaceutical section of the consortium held a significant share of the production and sale of medicines

for human use in the international market, the German pharmaceutical industry as a whole did not recover its strength after World War I, when it lost patents and markets in various parts of the world. Alongside its search for foreign institutes, which would be advantageous to incorporate, the group urgently needed to enter the veterinary products market.

Livestock production had skyrocketed from the last quarter of the nineteenth century, when refrigeration technology already permitted shipment of large quantities of raw meat to any location worldwide (Critchell; Raymond, 1912; Pilcher, 2004; Tarruella, 2012). Livestock herds in Argentina, Brazil, Uruguay, and Paraguay expanded throughout the first half of the twentieth century and were one of the centers of this new demand for animal products (Rock, 2008; Moraes, 2003). Regulations for the meat trade were created as a means of protecting the beef industry, in turn accelerating the professionalization of veterinary medicine. The incorporation of BW into IG Farben would be fundamental in planning how to enter countries with large herds of cattle, which offered a nearly untapped market for veterinary products.¹ The company already had expertise in this area, since it had attempted an introduction into the South American market through Argentina, where one of Emil von Behring's assistants went in 1907 to test a tuberculosis vaccine in cattle.²

Consequently, BW's request for incorporation was received immediately. In addition to the prospect of entering the veterinary market, the arrival of an institute which was a significant manufacturer of biological products would make a considerable contribution to the consortium's international expansion plans, particularly the attempt to outstrip its largest European competitor in the sale of these products, Serum-Union

1 Bericht über die Entwicklung der Behring-Institute, 1933 bis 1938, 4. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk. Tätigkeit der Behringinstitute und Produktionsstätten in Südamerika 1939-1947, Behringwerk-Archiv Marburg, Nr. 1827.

2 Informe presentado al Ministerio de Agricultura por la comisión oficial encargada de controlar la marcha de las experiencias realizadas en Buenos Aires bajo los auspicios del Superior Gobierno de la Republica Argentina sobre el tratamiento curativo de la tuberculosis bovina por medio de la "Tulaselaktin" del Profesor von Behring. Buenos Aires: La Palma, 1907/1908.

A.G. für Internationale Seuchenbekämpfung. In 1938, the annexation of Austria by Germany was a major blow to Serum-Union due to the loss of the Austrian Serum Company, its leading supplier of biological preparations for human use, which were mainly produced by the Vienna Serumtherapeutics Institute.³

The political aspects acquired by the companies comprising IG Farben after the rise of National Socialism have been questioned by historiography, which currently interprets the participation of the consortium as inevitable for its own survival and also credits the company's actions to the sphere of economic competition, not just political positioning. Serum-Union weakened as a result of violent authoritarian actions that dominated the German government, which the consortium did not hesitate to take advantage of. In a memorandum which was probably written after the Vienna Serum Therapeutics Institute was incorporated in 1938, we see express recommendations to prevent Germany's image from being tarnished, along with analyses of the ideological and ethnic/cultural affiliations of its members (such as Jews or communists) and the characteristics of the capital involved (namely Aryan or non-Aryan).⁴ Unfortunately it is not possible to identify who drafted this memorandum, and we consequently cannot infer that high-level IG Farben staff participated.

When BW was merged into IG Farben, the administrative policy of the consortium sought to concentrate activities in sectors. As a result, Behringwerke was responsible for producing biological products for human use, namely sera, vaccines, culture media, dyes used in bacteriology laboratories and diagnostic preparations, as well as veterinary, biological and synthetic products. With this change, Hoechst's biological products were now manufactured on the premises of BW in Marburg and the manufacture of synthetic drugs, such as "Yatren" and "Yatren

3 Bayer Archiv Leverkusen, BAL 166-018-006, Übernahme der Öst. Serungesell. GmbH. IG Farbenindustrie an das Reichswirtschaftsministerium, 19 sep. 1938.

4 Denkschrift Staatliches Serotherapeutisches Institut, Österreichische Serum-Gesellschaft, Wien. Behringwerk-Archiv Marburg, Nr. 882.

casein”, was transferred to Bayer. This concentration of biological product production in BW and the creation of a specific sales section for these products attest to the special importance of this company in the pharmaceutical industry consortium. BW benefited from Bayer’s extensive and well-established network of international contacts, and was quickly able to return to profitability (Homburger, 1993, p.76, p.85-87).

Despite the markets it lost as a result of World War I, Bayer continued to operate without major competitors in Latin America because its products were well-received in Brazil (the largest consumer in the region at that time) and because of the agreements it made with other companies. On October 28, 1920, for example, Bayer made a deal with Sterling, an American company, agreeing to retain 75% of the profits from selling its aspirin in South America while ceding the remaining 25% to Sterling. In 1923, a new agreement extended the partnership to virtually all pharmaceutical products (Quintaneiro, 2002, p.153).

In the race for foreign markets, BW’s subsidiaries took on special roles by establishing themselves in areas that had historically been viewed as untapped from a scientific and technological point of view. The notion of regions with abundant natural resources also extended to the field of microbiology, and European researchers who came to work in South America saw it as an oasis of diseases to be described and new medications to be invented (Cavalcanti, 2013a). The worldwide expansion of IG Farben would also be a way of increasing the “microbiological capital” of its reserves, because the enormous diversity obtained from collecting different microorganisms around the world would give it extremely powerful production capacity: “We have already mentioned in previous reports that researching native diseases in foreign countries has great economic significance”.⁵ In the reports of the Latin American institutes, alongside recommendations for the acquisition of

5 Bericht über die Tätigkeit der Behring-Institute im Jahre 1940. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk, p.02. Behringwerk-Archiv Marburg, Nr. 1827.

new markets were express requests to collect microorganisms to enrich the microbiological collections.⁶

The association between scientists and industries consolidated in the late nineteenth century, particularly starting in Germany, because this country's chemical and pharmaceutical industries greatly benefited from the 1877 patent laws that paved the way for interdependence and collaboration between the state, industry, and science (Johnson, 2000). Since association between scientists and industry was not the rule in Brazil (because the state always invested more in research and development) it is difficult to historically analyze how the relationships between scientists and industries unfolded here, especially because the country was an agro-exporting economy until the mid-1940s. For the companies linked to Bayer, our work was facilitated by the availability of the company's files in Germany and of the documents produced during the Brazilian intervention in the companies, which are held in Brazilian public archives.

The Behring Institutes were created in foreign countries primarily to strengthen German products through scientific propaganda made via advertisements in specialized journals, and particularly by consultants.⁷ The repercussions of these consulting services had a strong impact on health authorities, vendors and scientists if a new disease or epidemic was diagnosed; the intention was to show that German science was innovative and advanced. Consequently, the institutes were to resemble places of scientific research that above all would help improve health in the country where they worked, rather than merely represent a German pharmaceutical company. They had express orders to only manufacture products that could not be imported, to avoid competition with German exports and avoid creating profits, since it would be very difficult to pass

6 Bericht über die Entwicklung der Behring-Institute, 1933-1938. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk, p.09. Behringwerk-Archiv Marburg, Nr. 1827.

7 Bericht über die Tätigkeit der Behring-Institute im Jahre 1939. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk. Behringwerk-Archiv Marburg, Nr. 1827.

these on to the head office in Germany.⁸ Bearing this in mind, it was suggested in contract negotiations that the item addressing the objectives of the institute be modified: instead of stressing the commercial nature of the venture, scientific research in the field of human and veterinary medicine appeared as a priority.⁹

Starting in July of 1928, IG Farben financed part of the costs of printing the *German-Latin American Medical Magazine* (*Revista Médica Germano-Ibero Americana*), which was developed by German scientists and doctors who sought closer ties to their Latin American peers (Silva, 2011, p.570). This journal was founded in 1920 and published work in Spanish produced by scientists, mainly from the Hamburg Institute for Maritime and Tropical Diseases, and received support from companies like Bayer. German cultural diplomacy in Brazil was a joint venture between the German government, scientists, and industries, which created a network of institutional, scientific, and business collaboration to serve the goal of expanding German influence in Brazil and in Latin America. With the loss of its colonies in Africa, Germany found itself without territories in the tropics, which were necessary for microbiological research. The country consequently returned to locations where historical ties already existed as a result of emigration and a strong trade presence (Sá; Silva, 2010; Rolim; Sá, 2013).

Within the arena of this cultural diplomacy, the choice of the name Behring Institute was a strategy to bring the name Emil von Behring closer to serum therapy and consequently supplant the presence of the French, who had been more successful in this area in Latin America.¹⁰ Although the French wielded considerable influence in microbiology, a new historiography has shown the strong role played by German

8 Bericht über die Entwicklung..., 1933-1938, 6. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk. Behringwerk-Archiv Marburg, Nr. 1827.

9 BAL 009/K-001-002, Behring-Institut, Rio de Janeiro, Peiser an Química Industrial Bayer Meister-Lucius, Weskott & Cia, 10 okt. 1932.

10 Bericht über die Entwicklung der Behring-Institute, 1933 bis 1938, 1. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk. Behringwerk-Archiv Marburg, Nr. 1827.

scientists in cooperating with their Latin American counterparts (Rutsch, 2014; Chicote; Göbel, 2011; Birle, 2010).¹¹

The attempt to attach great political and cultural significance to the IBTE was a result of this scientific and cultural diplomacy fostered by scientists, entrepreneurs, and the German government since the 1920s. Latin America was the scene of geopolitical disputes in the period between wars. These disputes were expressed through cultural diplomacy, principally from Germany, France, and the United States, and even Italy, although this country's participation has not yet been addressed in detail through historiography (Bertonha, 1997).

THE BEHRING INSTITUTE OF EXPERIMENTAL THERAPEUTICS IN RIO DE JANEIRO

Negotiations to create the IBTE in Rio de Janeiro began in mid-1932 through the representation of *Chímica Industrial Bayer-Meister Lucis Weskott & Cia*, whose director for Brazil was Theodor Hermann Kaeble. The decision to create the first Latin American branch of BW in Rio de Janeiro (previously Capital) was based on the facilities that *Chímica Bayer's* extensive representation network would offer in the area of commercial and political negotiations. When the institute was created, representatives of Hoechst also provided a means of publicizing the products in the country, but in the end it was the experience of Heinz Neumann that determined which city was selected.¹²

11 Dossier Brazil-Germany: medical and scientific relations. *História, Ciências, Saúde — Man- guinhos*, vol. 20, n. 1, p.69-288, 2013. Available at: http://www.scielo.br/scielo.php?script=sci_issuetoc&pid=0104-597020130001&lng=en&nrm=iso/; Accessed: 28 set. 2016.

12 BAL 009/K-001-002, Behring-Institut, Rio de Janeiro, Mentzel und Peiser an Hermann T. Kaeble, 13 okt. 1932. In 1924, BW contacted the Brazilian firm *Ersnt Sonntag & Co.* offering a consignment agreement for resale of BW's products in Brazil. The partnership was short-lived, and culminated in BW suing the Brazilian firm in 1926 on the grounds that it did not pass the resale proceeds back to headquarters in Germany and retained goods pertaining to the German company after the contract ended. Resale in Rio de Janeiro was so important that Mr. Heinz Neumann was sent to Brazil to represent the German company in the suit and attempt to recover the market through agreements with other commercial representatives,

And it was the promising Brazilian market for biological products that was responsible for Brazil's selection as BW's first subsidiary in Latin America. After the Brazilian government invested heavily in the area of public health starting in the 1920s, when the sanitary movement managed to establish combating disease as a national political priority, the drug market became very attractive because the methods of disinfection using chemicals (which had been implemented at the end of the previous century) were soon replaced by the use of medications such as sera and vaccines (Ribeiro, 2000). Brazilian companies emerged at the same time as public health reforms, and also as were the result of stimulus triggered during World War I when European imports of medicines nearly ceased. Although American products met a small portion of Brazilian demand at that time, since growing domestic production was responsible for most of supply, German products quickly recovered the Brazilian market after the conflict. Using US State Department reports, the historian Tania Quintaneiro demonstrated the importance of the Brazilian market for medications during this period as well as American political and economic investments in dominating this market through political and economic actions which began even before World War II (Quintaneiro, 2002).

Work on the scientific relations between Brazil and Germany has shown that German cultural diplomacy in the 1920s strongly supported cooperation initiatives in the field of science which were simultaneously propagated by research institutes, private companies, scientists, and diplomatic authorities from both countries (Sá; *et al.*, 2009). Although as of this writing no studies have compared German, French, and American initiatives in cultural diplomacy during the period between wars, particularly with an emphasis on science, there have been publications on bilateral relations with Brazil in the sphere of scientific and cultural cooperation (Sá; Viana, 2010).

but it seems that this effort was not successful. Prozess Fa. Ernst Sonntag (Brasilien) gegen Behring um Provisionen, 1924 bis 1927. Behringwerk-Archiv Marburg, Nr. 1120.

Association with the Weimar Republic's plan for cultural dissemination should not be seen only as a strategy for strengthening corporate positions in the Brazilian market, since the German cultural values propagated by pharmaceutical advertising reflected what the Germans themselves thought about their country and culture. As a result, scientists and business leaders shared the same cultural values when they dedicated themselves to activities disseminating German science and industry. When we deal with international relations we must also pay attention to the national context, because particularly in this case of biological products the German market faced a disadvantageous situation that forced introduction of these products into foreign countries. The global economic crisis (originating in the Great Depression of 1929) and the creation of serum therapy institutes by the countries to which Germany exported led to decreasing prices for these products. Furthermore, the need to create the subsidiaries was provoked by the creation and implementation of new customs laws in the importing countries that made German exports inviable.¹³

In view of this situation and the promising Brazilian and South American markets for veterinary pharmaceuticals, the Behring Institute for Experimental Therapeutics Ltd. was created in Rio de Janeiro on November 21, 1932. Behringwerke A.G. Marburg held 80% of the capital, while the German Theodor Hermann Kaelble and Brazilian Renato Ferraz Kehl each held 10%.¹⁴ Naming Kaelble to fulfill the role of director of Bayer and BW in Brazil was meant to optimize advertising resources, avoid competition between these companies' products, and facilitate coordination of distribution networks. As mentioned previously, BW used these networks which had been consolidated for years by Bayer and Hoechst to a great extent in both Brazil and in Latin America.

13 BAL 006-014, Behringwerk, Marburg, Aufsichtsrats-Sitzung der Behring-Werke Aktiengesellschaft am 16 sep. 1932/Bericht über die Entwicklung des Serum-Geschäftes.

14 Bericht über die Entwicklung..., 1933-1938, p.11-12. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk. Behringwerk-Archiv Marburg, Nr. 1827.

The head office in Marburg stated that the foreign scientists hired were to remain in positions where they would not become familiar with the production process (such as administration and advertising), while scientific direction was only to be entrusted to German scientists (Homburger, 1993, p.144). Whether German or foreign, all were required to sign contracts surrendering rights so their descendants would not be able to make any claims on the brand or products that their family members might develop.¹⁵

The Brazilian IBTE was established as a private limited liability company, which meant that most of the capital was still German. In the founding contract, we see that Heinz Neumann remained as a proxy for BW, reinforcing the argument that the choice of Rio was largely due to his previous experience in the country. The contract was established for a minimum of ten years, and could only be terminated unilaterally by BW without compensation to the other partners. Like *Chímica Bayer*, IBTE had administrative autonomy in relation to the head office in Germany, which encouraged concise reports and queries. The idea was to establish representation for the products while supplying the company with German capital and personnel.¹⁶

The presence of a Brazilian within the group of shareholders was required according to Brazilian legislation of the time, and Kehl had already been working in Bayer's Rio subsidiary since 1924. Initially, he worked in manufacturing quality control and drug storage, but within three years he moved to the post of medical director and head of the company laboratory, and was forced to leave the National Department of Public Health (Departamento Nacional de Saúde Pública, DNSP). Kehl had academic training in pharmacy and medicine as well as German ancestry and fluency in the language, but what may have appealed

15 BAL 009/K-001-002, Behring Institut, Rio de Janeiro, T. Hermann Kaelble an die IG Farbenindustrie Aktiengesellschaft, Leverkusen. Undated.

16 BAL 009/K-001-001, Instituto Behring de Therapeutica Experimental Ltda/Brasilien, Escritura de constituição da sociedade comercial por quotas de responsabilidade limitada, denominada Instituto Behring de Terapêutica Experimental Limitada. 30 dec. 1932. 5º Ofício.

to Bayer was his engagement and prestige in Brazilian scientific, intellectual, and political circles, especially with regard to eugenics (Rolim; Sá, 2013, p.175).

Kehl's relationship with Kaelble had been troubled since the 1920s, when the former called for more effective participation in Bayer's medical directorship (Rolim; Sá, 2013, p.175). It is likely that Kaelble's complaints reflected a fear of giving too much liberty to a Brazilian with whom he would have to compete for influence over the directorship in Leverkusen; as the director of Bayer in Brazil, it bothered him to officially have the same function as a Brazilian native in the leadership of the new company.

Because the company's policy was to keep non-Germans out of key positions or impede their access to important information related to production, everyday contact with the Brazilian was tense. In the correspondence concerning the negotiations to create IBTE, Kaelble advised BW's central directorship in Leverkusen to not let Kehl officially hold the same share of representation as himself; since he had known the Brazilian for some time, he anticipated that Kehl might demand greater participation in decision making.¹⁷ But his presence in the two firms was very important for their acceptance among Brazilian physicians and for dealing with bureaucratic issues.

Despite Kaelble's reservations, Kehl was invited to be part of the new Behring Institute as a partner. By the late 1920s, Renato Kehl had become interested in the more radical ideas of 'negative eugenics' and intensified his relationship with German experts, which led him to distance himself from Brazilian medical and sanitarian thought (Wegner; Souza, 2013). Although his departure from DNSP further contributed to this distancing, he was the son-in-law of the director of this state agency which was responsible for health activities and drug monitoring in the country.

17 BAL 009/K-001-001, Instituto Behring de Therapeutica Experimental Ltda/Brasilien, Hermann Kaelble, Rio de Janeiro, an Direktion Pharma, Leverkusen, 08 dez. 1932.

When IBTE was founded in Rio in 1932, Brazil experienced a time of political instability due to the recent state coup (also viewed as the 1930 Revolution). Health politics in Brazil had split into two sectors: in the Ministry of Education and Public Health and in the Ministry of Labor, Industry and Commerce. The principle activities of the first were directed to the rural area and non-employee population in urban centers and translated in sanitary campaigns and services for specific diseases. While the other concentrated in the industrialist's formal workers through the social security organizations, which had its own physicians and support the beneficiary in case of disease (Fonseca, 2007).

The supply of biological products in Brazil was mainly done by three institutes that provided the most needed products, like vaccines and sera, for the health system and for private physicians (Ribeiro, 2000; Benchimol; Teixeira, 1994). Since 1900, Oswaldo Cruz Institute and Butantan Institute are public and under federal and São Paulo state administration, respectively, while Institute Pinheiros, created in 1928 by former employees from Butantan, was a private enterprise until the final 1950s. Foreign firms dominated the market of synthetic drugs which were purchased by the federal government in special circumstances as in the case of malaria epidemics in the 1940s, when Bayer sold a lot of pills of Atebrin and Plasmochin for different federal institutions.¹⁸ Vaccines and medicaments could also be purchased by social security's organizations.

ORGANIZATION AND DEVELOPMENT OF THE RIO DE JANEIRO IBTE'S ACTIVITIES

From its foundation until 1935, the Rio IBTE's scientific director had been the German Walter Menk, who in July of this same year moved to Buenos Aires to direct the newly created Behring Institute of Experimental

18 A Chimica Bayer Ltda. ao Capitão Orlando da Fonseca Rangel Sobrinho, aos 18 abr. 1942, "Ref. Sulfato de Quinina, Produtos Antimaláricos". Arquivo Orlando da Fonseca Rangel Sobrinho/ MAST.

Therapeutics S.R.L. Dr. Karl Robert Koch, former director of the Bacteriological Laboratory of the Pennsylvania Hospital and former BW representative in the United States, was tapped to replace Menk. Between 1935 and 1937, the official veterinarian was Dr. Walter Hausmann, who was forced to leave when his application for permanent residency was denied because he was a “subject of the Reich.” He was soon replaced by Iris de Abreu Martins, a Brazilian of German descent who had spent a few weeks in BW’s laboratories in Marburg.¹⁹

Initially, the main productive activities at the institute were limited to filling vials of Omnadin,²⁰ producing vaccines for human and veterinary use, and manufacturing some sera such as the anti-tetanus serum. Because the import tariffs for some sera were extremely high, this production had to be introduced into the IBTE.²¹ It was also necessary to establish the factory because of the new laws on supervising biological products, which were enacted in the early 1920s and began to hinder the entry of some foreign products. The impact this new health legislation had customs duties has not yet been reviewed in depth, but by observing some legal provisions we see that the changes occurred gradually, making entry of biological products into the country more difficult and expensive (Cavalcanti, 2013b, p.146-147).

However, the IBTE’s main objective was to enter the Brazilian medical and scientific environment and consolidate itself as a partner and a representative of German science, and consequently promote the company’s products. Walter Menk was crucial in this task, which required travel throughout Brazil’s vast territory and political negotiations around testing the anti-malarial products Atebrina and Plasmochin. The institute’s participation in campaigns against malaria in the

19 ‘Bericht über die Entwicklung..., 1933-1938’, p.14.

20 Omnadin was a preparation made from parts of different pathogenic bacteria and stimulated the immune system in people afflicted with infectious diseases. Pesquisa sobre o mecanismo de ação da Omnadina. *Soros e vacinas*. Rio de Janeiro: Instituto Behring, undated.

21 Bericht über die Entwicklung..., 1933-1938, p.14. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk. Behringwerk-Archiv Marburg, Nr. 1827.

Baixada Fluminense (the greater Rio de Janeiro area) led by the Rio de Janeiro State Board of Health (Direitoria de Saúde do Estado do Rio de Janeiro) and in the city of Engenheiro Dolabella in the state of Minas Gerais with the malarial specialist Dr. Genserico de Souza Pinto (DNSP) as well as treatment of schoolchildren with hookworm in the Federal Capital permitted preliminary tests of these drugs.²²

When a German scientific mission reached the state of Espírito Santo to evaluate the adaptation of German descendants to tropical regions in 1936 (A. F. C. Silva, 2013), Menk joined in to examine students of German heritage, looking for malaria and hookworm. The creation of a laboratory diagnosis section and trips around the country consolidated contact with Brazilian scientists, as well as relations with physicians of German descent and hospitals in the regions German settlers had colonized.

Closer relationships also permitted the acquisition of bacterial strains native to Brazil to produce human vaccines, such as the partnership with Dr. Pinheiro Machado of the Gaffré Guinle Foundation, through which Menk modified the active ingredient of Omnadin.²³ Sales of this product almost gave the Rio IBTE financial independence from the head office. The Rio de Janeiro subsidiary could have reached self-sufficiency in a short time if the war had not broken out in 1939 and begun to hinder the operations of the Latin American institutes. The participation of the Latin American branches in the war effort only began in 1939, when the Rio IBTE had to assume administration of the other Latin American institutes in order to organize product supply and distribution.

In the mid-1930s, the headquarters in Germany had already begun to manufacture products such as anti-gangrene, anti-tetanus, and anti-peritonitis sera in great quantities, as well as vaccines against typhoid, cholera, dysentery, plague, and smallpox, considering the importance of these products to the war effort (Homburger, 1993, p.88). The international expansion of IG Farben had to suit the expansionist intentions of National Socialism, which aimed at German self-sufficiency for essential

22 Anfangsjahre der überseeischen Behring-Institute. Behringwerk-Archiv Marburg, Nr. 881.

23 Anfangsjahre der überseeischen Behring-Institute. Behringwerk-Archiv Marburg, Nr. 881.

products; these aspirations eventually impacted the companies' research and production priorities (Hayes, 2001; Lindner, 2011). Although they were accused of being agents of the Nazi government, there is little evidence to confirm that the German companies in Brazil intensely supported the Nazi party. It can be assumed that a considerable number of the leaders of these companies were involved with the actions of Nazi agents because it was almost mandatory to affiliate with the party (Gertz, 1996).

The Nazi government was interested in maintaining the neutrality of Latin American governments and ensuring that trade relations could return to what they had been before the conflict began (Rahmeier, 2013, p. 173). In Brazil, at least until the diplomatic rupture of January 1942 and even with the economic constraints imposed by the Allies, the presence of Bayer and IBTE allowed their products to be widely accepted by Brazilian consumers²⁴ despite growing public rejection of Germany. In Spain (which remained neutral during the conflict) and some Eastern European countries under German rule, these branches and subsidiaries guaranteed the presence of German products in the European market (Vilaplana; Bueno, 2001).

The Mexico City and Bogotá branches were created in February 1938 and February 1939, respectively, to improve the supply of products in the region and to expand BW's performance on the continent, especially in Central America and Caribe where USA firms had a strong presence. Planning for the construction of the Bogotá branch was overseen by the scientific director of the Rio branch, Dr. Karl Robert Koch, who remained in the city from January to March of 1939.²⁵ The directorship was assumed by the veterinarian of the Buenos Aires IBTE, E. Schultze, who was transferred in May 1940 even though production began in

24 Bericht über die Tätigkeit der Behring-Institut im Jahre 1939. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk, 1940, 1. Behringwerk-Archiv Marburg, Nr. 1827.

25 Taetigkeitsbericht IB Rio, 1939, in Bericht über die Tätigkeit der Behring-Institut im Jahre 1939. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk, 1940, 13. Behringwerk-Archiv Marburg, Nr. 1827.

late 1939.²⁶ The Mexico City IBTE was inaugurated in the presence of government officials, physicians and scientists, and production began some months later.²⁷ The choice of these capitals was strategic and may have been based on reports produced in 1933 by the biological products consultants that BW had sent to Bayer's foreign facilities to identify potential consumer markets.²⁸ However, the Rio de Janeiro base was crucial to better understand how the market for biological products functioned on the continent.

In the mid 1930 Brazil was the main commercial partner of Germany in Latin America through the compensation commerce, that is, Brazil exchange raw materials for German industrial goods. This commerce aimed the acquisition of a stock of essential products for the preparation of war and it was inside a large aggressive commercial politics that substituted the *laissez faire* since the Great Depression. Even with the diplomatic rupture of 1938-1939, caused by discordance of the German diplomatic staff in Brazil regarding the new nationalization politics, Brazilian-Germany international commerce did not cease (Alves, 2002, p.57).

Unlike Colombia and Mexico, Brazil had a far location from USA and for this reason was more prone to be commercially explored without American competition. Additionally, German descendants in Brazil surpass in great number their counterparts in those Latin American countries, and as already mentioned there existed a long history of

26 Instituto Behring de Terapeutica Experimental Cia. Ltd. (Behring Institut GmbH), Bogota. Bericht über die Tätigkeit der Behring-Institut im Jahre 1939. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk, 1940, 40. Behringwerk-Archiv Marburg, Nr. 1827.

27 Instituto Behring de Terapeutica Experimental SRL (Behring Institut GmbH), Mexico. Bericht über die Tätigkeit der Behring-Institut im Jahre 1939. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk, 1940, 28.

28 Länderbesprechung Argentinien, 18 mai 1933; Länderbesprechung Bolivien, 17 mai 1933; Länderbesprechung Brasilien, 03 mai 1933; Länderbesprechung Chile, 17 mai 1933; Länderbesprechung Kolumbien; Länderbesprechung Equador; Länderbesprechung Mexico, 03 mai 1933; Länderbesprechung Paraguay, 18 mai 1933; Länderbesprechung Peru; Länderbesprechung Uruguay, 19 mai 1933; Länderbesprechung Venezuela. Behringwerk-Archiv Marburg, Nr. 460.

commercial relationship supported by Bayer and Hoechst in many cities of Brazil. It seems clear that Brazil was strategically the base and the way of entering into the Latin American market of biological products and synthetic pharmaceuticals.

CHANGES IN THE LATIN AMERICAN IBTEs AND THE ROLE OF THE RIO DE JANEIRO SUBSIDIARY AFTER THE BEGINNING OF WORLD WAR II

With the outbreak of war and expectations of a British naval blockade, the institutes in Rio and Buenos Aires placed a large order for imported materials such as glassware and filters to ensure their operations. But it was the Rio branch that coordinated an integrated activity plan to guarantee supply for all the Latin American countries where BW was active, constituting a German war effort on Latin American soil. From then on, the Rio de Janeiro branch assumed the administrative functions that the central office in Leverkusen had performed, as well as the production that had come from the Marburg factory. It consequently began to supply veterinary products to Cuba, Central American countries and Mexico, where the local IBTE was not yet able to supply the country, much less manufacture products for export.²⁹

Brazil was relatively neutral in the conflict until August 1942, when the government declared war in response to the German submarines attacks to Brazilian ships in our coast. One year earlier Brazilian government authorized the construction of military bases and airports in the Northeast of the country by an American firm to serve for the supply of war equipment's to the Allies via Africa. Additionally, at the same period, both countries closed an agreement with that Brazil provided the USA with many raw materials crucial to the war effort. 1941 was the

²⁹ Bericht über die Tätigkeit der Behring-Institut im Jahre 1939. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk, 1940, p.11-12. Bericht über die Tätigkeit der Behring-Institut im Jahre 1940. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk, 1940, 10. Behringwerk-Archiv Marburg, Nr. 1827.

year that the conflict expanded internationally and Brazil participation was like many countries in Latin America almost natural since the USA area of influence had greatly widened (Alves, 2002, p.119-120).

The 1941 report on BW's foreign branches states that the plans to expand bacteriological serum sales to Europe had not been affected by the war, while the institutes outside of Europe (which were only in Latin America) were undergoing intense and unplanned changes. With the British sea blockage, the primary function of promoting German imports in Latin American countries was abruptly replaced by the obligation to manufacture these products.³⁰ Furthermore, and perhaps more problematic, they were on the "defensive", in other words, they were vulnerable, far from the protection of the German army and more prone to interference from local governments; this was the case in 1941, when the Rio branch experienced resistance and sabotage directed at 'Axis subjects', namely German, Italian, and Japanese companies (Lochery, 2015, p.188).

At the end of 1939, accordingly to reports the branches had been able to supply the Latin American market with products that had previously been imported from Germany, albeit in insufficient quantities to meet the existing demand. Although they had not planned to manufacture these products, the institutes were able to carry out their intended role, ensuring the presence of German products in Latin America: "during the months of the war the importance of the institutes in Latin American countries to German exports became clear".³¹

But the institutes never reached financial self-sufficiency, even with the increase in production during the conflict. Some reasons for this include the profitability limits Leverkusen imposed on the IBTE, as well as high competitiveness in the Brazilian market for biopharmaceuticals. For example, when the human vaccines from the Rio IBTE arrived in

30 Bericht über die Tätigkeit der Behring-Institut im Jahre 1941. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk, 2. Behringwerk-Archiv Marburg, Nr. 1827.

31 *Bericht über die Tätigkeit der Behring-Institut im Jahre 1939*. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk, 1940, 1. Behringwerk-Archiv Marburg, Nr. 1827.

the Brazilian market there was already a wide variety of vaccines from domestic and foreign competitors.³² Furthermore, trade in biological products suffered a serious blow with the introduction of sulfa drugs in the 1930s; this had a dramatic impact on sales of Omnadin, which had been the institute's most profitable product.³³

The competition also included products from other German companies, since the German pharmaceutical industry cannot be considered a single and cohesive enterprise, partner, or extension of the German government. There was a bitter rivalry between research groups in Germany which led to a race in developing new vaccines, sera, and medicines to be used by both troops and the civilian population.³⁴ The pharmaceutical division of IG Farben suffered constant internal pressure from public and private research institutes. The association between the consortium and National Socialist policy can be seen as a meeting of interests resulting from coercion; in other words, there were benefits for both parties from this cooperation, although it was basically inevitable for the survival of the consortium. Businesses do not have many options under totalitarian regimes, and need to choose between affiliating themselves with the economic interests of the new government or running the risk of confiscation by the state or by their competitors. This does not justify affiliations with barbarous regimes like the Third Reich, and this even cooperation yielded significant growth for IG Farben, which benefited from the exploitation of human beings and arbitrary confiscation of property (Lindner, 2011, p.03-05).

32 Bericht über die Tätigkeit der Behring-Institut im Jahre 1939. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk, 1940, 8. Behringwerk-Archiv Marburg, Nr. 1827.

33 Bericht über die Tätigkeit der Behring-Institut im Jahre 1939. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk, 1940, 8. Behringwerk-Archiv Marburg, Nr. 1827.

34 ROTH, Karl Heinz. *Die I.G. Farben im Zweiten Weltkrieg*. Frankfurt am Main: Firtz Bauer Instituts, 2009, p.59. Available at: http://www.wollheim-memorial.de/files/1000/original/pdf_Karl_Heinz_Roth_Die_IG_Farben_Industrie_AG_im_Zweiten_Weltkrieg.pdf, Accessed: aug. 03, 2016.

The historiography concerning German companies during National Socialism agrees that the political premises guided the course of the economy; in other words, the administration of these companies did not participate decisively in the political and economic constitution of the Third Reich, although some had already prepared themselves to cooperate in the new circumstances. An attempt was made to clarify that the actions perpetrated by these companies did not have an impact on the ideological formation of the Third Reich, but were also driven by commercial calculation and competition. The enslavement of people and confiscation of competing firms took place during a period of institutionalized barbarism, but were based on this conduct of competitiveness. As suggested by Stephan Dr. Lidner (2011, p.03-05), this competition could explain why resistance in the business community was lower than in the military, where obedience is essential to one's career.

We did not identify a close relationship between Nazi cells in Brazil (or Nazi sympathizers) and the IBTE's employees and management. Although there are indications that diplomatic representations permitted illegal transfer of IG Farben's foreign currency to its subsidiaries in Latin American,³⁵ and that the consortium contributed financially to the Nazi government, it is not possible to infer that both entities strategically planned to use their business as a means of disseminating Nazi ideology or financing spy operations. The fact that the German embassy in Rio de Janeiro received loans from Química Bayer does not allow us to conclude whether these funds were used for acts of espionage or subversive activities, as the Brazilian secret police maintained.³⁶ It is possible that the historical interpretations that Bayer and other German companies were only puppets of the Nazi government's interests derived from an uncritical reading of the sources from that time. We can specifically

35 BAL 330/1071, An das Reichswirtschaftsministerium. Vertrauliche Zahlung in Brasilien und Chile, 25 Oktober 1939. Reichsbank, Reichswirtschaftsministerium, 1939.

36 ARQUIVO PÚBLICO DO ESTADO DO RIO DE JANEIRO. Fundo Polícias Políticas do Rio de Janeiro, setor: Alemão, notação: 21. Ofício n. 19 de 03 mar. 1943 do Major Olynto França Almeida e Sá ao Coronel Chefe de Polícia do Distrito Federal.

identify this vision in a report by the Civil Police of the Federal District on Bayer: “The head office of *Chímica Bayer* again is *IG Farbenindustrie*, a sole proprietorship of the German government. In reality, Bayer’s share capital does not belong to its shareholders, but instead to the German government, which provided the necessary funds”.³⁷

Considering that Brazilian historiography has already shown that the Nazi party’s activities in Brazil involved many employees from industry and bankers (Dietrich, 2012), we can conclude that Bayer and the IBTE’s alleged participation in funding or spreading Nazi ideology may have served American interests very well by toppling the predominance of German pharmaceutical products in Brazil; it also may have served Brazilian interests, which predicted the events that would result from the conflict and were quick to confiscate these companies and direct them toward national needs.

The economic war that waged in Brazil, even before the diplomatic rupture with Germany, was soon perceived by the scientific director of IBTE/RJ. Since the administration of production and distribution of the products from the four institutes had been concentrated, the stages in producing *Omnadin* could be divided between the institutes for security reasons, namely so that its method of manufacture would not be discovered.³⁸

Attempts to protect the company began in mid-1941, when the IBTE’s statutes were altered to increase its capital and to renew them well in advance (they had been scheduled for renewal on November 21, 1942).³⁹ The increase in capital was likely a way of evading tax laws that focused on profits, since sending foreign currency was limited (as was

37 ARQUIVO PÚBLICO DO ESTADO DO RIO DE JANEIRO. Fundo Polícias Políticas do Rio de Janeiro, setor: Alemão, notação: 21. Informações N° 82 A QUIMICA BAYER, 10 nov. 1942, Polícia Civil do Distrito Federal.

38 Zahn a Mertens, 06 jan. 1942, Tätigkeit der Behringinstitute und Produktionsstätten in Südamerika 1939-1947. Behringwerk-Archiv Marburg, Nr. 1827.

39 BAL 009/K-001-001, Instituto Behring de Therapeutica Experimental Ltda/Brasilien, Escrita de alteração de contrato social do Instituto Behring de Terapêutica Experimental, LTDA que fazem a Behringwerke Aktiengesellschaft e outros.

any kind of communication with Germany). The renewal was moved forward to guarantee the support of the Brazilian Renato Kehl during a moment of uncertainty in relations between Brazil and Germany.

Before the second diplomatic break, in January 1942, German trade was damaged by boycotts and the refusal by the Brazilian shipping company Lloyd Brasileiro to transport German products to other ports in Latin America.⁴⁰ However, it was not only companies from Germany or the other Axis countries that suffered as a result of the trade war which unfolded alongside the military conflict. Some Brazilian companies were damaged by the pressure to abandon trade with the Axis countries, such as the timber industry in the state of Paraná, which went on to face new and powerful American competition in selling timber in the Platina region of South America, where it had redirected its exports after losing Germany as its main consumer.⁴¹

In addition to the naval blockade maintained by England, which prevented the arrival of German goods and export of Brazilian products, the publication of blacklists starting in 1940 caused even more problems for the economic balance of domestic and foreign companies operating in Brazil. The inclusion of a company on one of these lists could result in a number of outcomes: the company could have nearly all of its employees replaced, could close after its operations were halted, its leadership could be removed from their posts, or the company's capital could be bought through transactions which were often dubious (Quintaneiro, 2005).

The practice of creating lists with the names of people and companies to be commercially, socially or politically banned dates from World War I, when England, France, Germany, and even the United States (a great critic of these lists) adopted this tactic (Bailey, 1934). In 1940, England resumed the practice, which was enhanced by intense participation by

40 Secretaria de Estado das Relações Exteriores à Embaixada da Alemanha, aos 31 maio 1941. Representações Diplomáticas Estrangeiras no Brasil/Alemanha, ago.1940-1942 (ref. 81/3/3, Acervo do Arquivo Histórico do Itamaraty no Rio de Janeiro).

41 Comissão de Defesa da Economia Nacional ao Ministro das Relações Exteriores do Brasil, Oswaldo Aranha, aos 06 maio 1940. Representações Diplomáticas Estrangeiras no Brasil/Alemanha, jul-1939-1940 (ref. 81/3/2, Acervo do Arquivo Histórico do Itamaraty no Rio de Janeiro).

the United States in mid-1941, which eventually popularized it by failing to keep the lists confidential. The United States expanded and strengthened commercially in Latin America during World War II through the blacklists because after a company was placed on one of these lists, its command posts or capital were divided by the Allies with the US receiving a predominant share (Quintaneiro, 2005, p.78; Lochery, 2015, p.242).

In early 1941, Bayer and the IBTE were included on the British blacklist.⁴² To escape the resulting difficulties, in January 1942 Hermann Kaelble (under the legal guidance of the lawyer Vicente de Saboia Lima) began to transfer the shares of Bayer, IBTE, Paladon, and Farmaco,⁴³ which were in the names of Germans, to Brazilians or naturalized Brazilians.⁴⁴ Relations between Brazil and Germany shuddered to a halt that same month with the rupture of diplomatic relations, which may also have been decisive to nationalization.

The difficulties arising from the IBTE's inclusion on the blacklist culminated in intervention in the institute and in all the companies related to Bayer in Brazil in March 1942, with the publication of Decree 4166 on reparations in retaliation for the attacks on several Brazilian ships.⁴⁵ This

42 Secretaria de Estado das Relações Exteriores à Comissão de Defesa da Economia Nacional, aos 09 abr. 1941 e 24 abr. 1941, Representações Diplomáticas Estrangeiras no Brasil/Alemanha, ago.1940-1942 (ref. 81/3/3, Acervo do Arquivo Histórico do Itamaraty no Rio de Janeiro).

43 Indústria Dentária Paladon Ltda. was created on sep. 29, 1938 for resale of dental products, while Farmaco Ltda. (founded march 29, 1934) resold Drugofa's products. ARQUIVO PÚBLICO DO ESTADO DO RIO DE JANEIRO. Fundo Polícias Políticas do Rio de Janeiro, setor: Geral, notação: 51.

44 The transfers were null, since the employees (who had become shareholders) immediately signed proxy orders and promissory notes in which they granted their newly-acquired rights to Dr. Saboia Lima. This report states that these documents were in the possession of the police. ARQUIVO PÚBLICO DO ESTADO DO RIO DE JANEIRO. Fundo Polícias Políticas do Rio de Janeiro, setor: Alemão, notação: 21. Dossier da Bayer, elaborado pelo Dr. Theobaldo Neumann, Delegado Especial de Segurança Pública e Social; 09 ago. 1943.

45 DECRETO-LEI Nº 4.166, DE 11 DE MARÇO DE 1942. Dispõe sobre as indenizações devidas por atos de agressão contra bens do Estado Brasileiro e contra a vida e bens de brasileiros ou de estrangeiros residentes no Brasil. Available at: <http://www2.camara.leg.br/legin/fed/decllei/1940-1949/decreto-lei-4166-11-marco-1942-414196-publicacaooriginal-1-pe.html>; Accessed: July 21, 2016.

decree determined that the property and rights of Germans, Japanese, and Italians would remain under the supervision of the Brazilian government and, in some cases, part of these goods would be confiscated as reparations for damages resulting from the attacks.

After a meeting in January of this same year in Leverkusen, it was recommended that the Latin American branches destroy instructions and production specifications if there was a danger they would be confiscated by the public authorities.⁴⁶ This is one of the signs of the tension that had established itself in the Rio IBTE. Postal contact was cut in March 1942, preventing a more detailed account of the Institute's situation in 1941 from being sent to the headquarters in Germany, which received only numbers related to sales and quantities of the products which were sold.⁴⁷ The available sources are letters and statements which could be exchanged until communications were completely suspended.

The Brazilian government took over administration of *Chímica Bayer Ltda.* on March 19, 1942 by appointing Major Orlando da Fonseca Rangel Sobrinho,⁴⁸ who also became the administrator for *Schering S.A.*, another pharmaceutical company of German origin.⁴⁹ By then Brazil

46 Aus Beschreibung mit Dir. Dr. Demnitz-Marburg in Leverkusen am 19 jan. 1942. Behringwerk-Archiv Marburg, Nr. 1827.

47 Streng vertraulich! Abschrift des Rundschreibens der Wirtschaftspolitischen Abteilung, Berlin NW 7, Unter den Linden 78, vom 13. März 1942/Tätigkeit der Behringinstitute und Produktionsstätten in Südamerika 1939-1947. Bericht über die Tätigkeit der Behring-Institute im Jahre 1941. Behringwerk/I.G. Farbenindustrie Aktiengesellschaft, Leverkusen I.G.-Werk. Carta de Zahn a Mertens, 06 jan. 1942, Tätigkeit der Behringinstitute und Produktionsstätten in Südamerika 1939-1947. Behringwerk-Archiv Marburg, Nr. 1827.

48 Major Orlando Rangel was a member of the Board of Ordnance for the Ministry of War. He participated in the Brazilian Military Commission of Essen from August 1938 to February 1941, when he traveled to Germany and Europe to buy weapons for Brazil. On August 29, 1942 he was appointed representative from the Board of Ordnance to the Brazilian Commission of Economic Studies. In 1946 he joined the Brazilian Military Commission in the United States, where he got a close-up view of the atomic bomb tests. *Fé-de-Ofício do Gen-Div-R1 Orlando Fonseca Rangel Sobrinho - Pasta XXVII-17-28 Seção de Acervos de Pessoal Militar - Divisão de Acervos Documentais-Arquivo Histórico do Exército.*

49 PORTARIA DE 19 DE MARÇO DE 1942. N. 3167 - Nomeia, de conformidade com 'o disposto no art. 38, alínea k, do decreto-lei n. 3.940, de 16 dez. 1941, e em face do decreto-lei n. 4.174, de 13 do corrente, diretor-técnico militar da "Schering, S. A." e da "A 'Química Bayer Ltda.,"

was in an almost belligerence state to Germany since it transferred the command of Brazilian Navy and Air Forces to an American commander who even tried to sink German submarines that were surrounding the Brazilian coast (Alves, 2002, p.170-171).

In August 1942, when some Brazilian ships were torpedoed by German submarines, the population's response was to destroy and burn property belonging to "Axis subjects" (Lochery, 2015, p.186).⁵⁰ Although the Brazilian government did not take measures to avoid these reactions, protection of Bayer and related companies had already been guaranteed by the provisional confiscation which had occurred some months before.

In fact, the economic interests and the opportunity afforded by Germany's isolation created circumstances permitting the incorporation of profitable German companies, as can be noted in the observation of Bayer's intervening administrator: "The providence of nationalization was actually imposed not so much because of hostility to the enemy subjects than rather to safeguard national interests that could be affected by the fact (among others) that owning "Bayer" would be an activity throughout all of Brazil, in an extensive network of subsidiaries and agencies".⁵¹ These national interests were related to security and preventing communication with spies, for example, as well as supplying the population, since Bayer had provided a considerable amount of medicinal products to the Brazilian market.

Additionally, this confiscation was one of the strategies the Brazilian government could still use independently, because it involved internal issues of security and supply. It is well known that Brazil's alignment with the Allies was not the result of a choice by the Brazilian

ambas nesta Capital, o capitão Orlando da Fonseca Rangel Sobrinho, sem prejuízo de suas funções no Exército.. *Diário Oficial da União*, Brasília, DF (Seção I), p.4469, 20 mar. 1942.

50 In the city of Campos in the state of Rio de Janeiro, protesters destroyed goods in the warehouse pertaining to 'Chimica Bayer'. Na Casa Bayer. *Diário de Pernambuco* (Recife), aug. 20, 1942. Available at: http://memoria.bn.br/DocReader/029033_12/10143; Accessed: oct. 04, 2016.

51 ARQUIVO PÚBLICO DO ESTADO DO RIO DE JANEIRO. Fundo Polícias Políticas do Rio de Janeiro, setor: Alemão, notação: 21. Ofício nº76, 15 jun. 1943, ao General Presidente da Comissão de Defesa Econômica.

government, but instead stemmed from America's growing influence in Latin America and Brazil which began in the early 1930s. However, it is recognized that the Brazilian government learned to take advantage of the circumstances to benefit from this alignment; for example, it received an American loan to construct the National Steelworks and a supply of weapons for the Brazilian army (Alves, 2002).

But the economic war waged by the United States and England was seen negatively by the Brazilian public and by government sectors, which accused these countries of abusive price increases resulting from control of a share of foreign trade in the Atlantic and from interference in the economic balance that had existed prior to the conflict. Under the intervention of the Brazilian government, Bayer still posed a large threat to the interests of the American pharmaceutical company Sterling due to its extensive market penetration and the preference for Bayer products in Brazil, as well as the possibility that after the war the German company would recover its markets, which had been the case after World War I. In light of this, in 1941 (even before the Brazilian intervention in Bayer) Sterling broke the agreement it had signed in 1920 to divide the market in the Americas and create Winthrop Laboratories Ltd. to resell its products (Quintaneiro, 2002, p.153).

A study quantifying the comprehensive reach of *Chímica Bayer* and the German companies it controlled in Brazil during the period preceding World War II has yet to be conducted. However, we can conclude that their activities were sufficiently important to be among the concerns of the American government, since its State Department produced extensive reports on the pharmaceutical industry in Brazil with an emphasis on Bayer, which had the largest share of the domestic market (Quintaneiro, 2002, p.145-147). Since the Brazilian government had been concerned about avoiding damage to the country's economy resulting from U.S. and British economic intervention through the black-lists, it wasted no time in incorporating the most profitable companies in the branch of biomedicine.

Furthermore, with the organizations which were dependent on Bayer under control, it would be easier to promote the intrusions which the

intelligence agencies had supposedly identified as essential for combating the spread of Nazism in Brazil. Consequently, June 1942 saw the first of a series of arrests of officers and employees of Bayer's organizations in Brazil: the IBTE's scientific director Karl Robert Koch was arrested by four agents of the Special Department for Political and Social Security (Delegacia Especial de Segurança Política e Social, DESPS). Although he had appeared on the list of returnees and received a safe-conduct pass from England and the United States (which was needed to cross the Atlantic), Koch was jailed in the Ilha das Flores prison for 15 days and released for lack of evidence that he had been involved in suspicious activities.⁵² From 1942 to 1945 this prison held Germans, Japanese, and Italians, who were systematically arrested and sent to nursing homes, hospitals, prisons, and prison farming colonies even before war was declared against the Axis countries in August 1942 (Perazzo, 2009, p.97).

DECLARATION OF WAR ON GERMANY AND INTRUSION INTO THE IBTE AND BAYER'S ORGANIZATIONS

On August 24, 1942, just days after the German attack on five Brazilian vessels, the intervening administrator Major Orlando Rangel named lawyer and stakeholding partner Vicente de Savoy Lima as Bayer's general manager. His first act was to create the post of "commercial technical consultant" in the departments where a Brazilian manager was to be placed, according to orders from the major. This maneuver was meant to accommodate the Germans who had lost their leadership positions in the organizations and to maintain operations in German hands.⁵³ It seems that this maneuver was not perceived or at least did not receive attention from the authorities, since there is no mention of it in

52 Ofício nº116, 09 Jun. 1942 (Representações Diplomáticas Estrangeiras no Brasil/Embaixada da Espanha, 83/2/2. Acervo do Arquivo Histórico do Itamaraty no Rio de Janeiro).

53 ARQUIVO PÚBLICO DO ESTADO DO RIO DE JANEIRO. Fundo Polícias Políticas do Rio de Janeiro, setor: Alemão, notação: 21. Ofício nº76, 15 jun. 1943, ao Gen. Presidente da Comissão de Defesa Econômica.

documents from the time. Days later, Brazil declared war on Germany, Japan, and Italy as a reaction to the attacks.

With the appointment of Major Olyntho de França Almeida e Sá as Bayer's administrator by the Brazilian president in January 1943, the activities of Saboia Lima and the others involved came to be seen as highly suspicious. The major sent constant reports about the company's financial situation and its possible political connections with the Nazi regime to the president of the Economic Defense Commission (*Comissão de Defesa Econômica*), which was created in October 1942 to confiscate the assets and rights of individuals and companies subject to Decree 4166.⁵⁴ Unlike the first appointee, Major Orlando Rangel, who was a chemical engineer and exercised functions related to Brazilian military and industrial strategy, Major Olyntho França Almeida e Sá was the superintendent of political and social security, and was therefore engaged in identifying members and activities related to the Nazi organization in Brazil (Dietrich, 2007, p.218).

The failed attempt to camouflage German ownership of the Bayer organizations through the transfer of shares to Brazilians was followed by the transfer of intellectual property. In April 1943, the IBTE asked the Animal Health Protection Division of the National Department of Animal Production within the Ministry of Agriculture (*Divisão de Defesa Sanitária Animal do Departamento Nacional da Produção Animal do Ministério da Agricultura*) to transfer responsibility for manufacturing four veterinary products to some its employees; these products were "Gastrof capsules," "a vaccine against diarrhea in calves," "Yatren, a vaccine against strangles," and "a vaccine against diphtheria in chickens."⁵⁵

54 DECRETO-LEI Nº 4.807, DE 07 DE OUTUBRO DE 1942. Cria a Comissão de Defesa Econômica, e dá outras providências. Available at: <http://www2.camara.leg.br/legin/fed/declei/1940-1949/decreto-lei-4807-7-outubro-1942-414918-publicacaooriginal-1-pe.html>; Accessed: july 26, 2016.

55 BRASIL. Ministério da Agricultura. Departamento Nacional da Produção Animal. Divisão de Defesa Sanitária Animal. *Diário Oficial da União*, Brasília, DF, p.6.124, 22 abr. 1943. Seção I. One of these employees was Dr. Iris de Abreu Martins, who on April 25, 1933 was appointed assistant in the Institute of Animal Biology of the Board of the National Department of

This maneuver does not appear in the documents relating to the investigation into the Bayer organizations conducted by the political police, and likely passed unnoticed by the Brazilian authorities.

During the period of Major Orlando Rangel's administration, there was apparently no strong suspicion that the employees and directors of these companies were involved in spying or in Nazi propaganda, so much so that the lawyer Saboia Lima informed Rangel (and personally informed the Minister of Finance) when he learned of Bayer's loan to the German embassy in Rio de Janeiro from January 1940 to July 1942.⁵⁶ Major Olyntho Almeida e Sá's appointment, however, determined that an intense investigation of Bayer's organizations in Brazil would be conducted, with the hiring of experts to investigate the companies' accounts. On April 26, 1943, the major sent the president of the Economic Defense Commission a communication containing the report of tax and criminal complaints which had already been directed at these German companies and suggestions to nationalize them once and for all.⁵⁷

In August 1943 an inquiry was begun by the Special Department for Social and Political Security (Delegacia Especial de Segurança Política e Social) to determine the nationalization measures which were underway in the Bayer organizations and their participation in activities related to espionage and Nazi propaganda. The following parties were investigated: Theodor Hermann Kaelble, Vicente de Saboia Lima, Iris de Abreu Martins, Renato Ferraz Kehl, Johanna Muller, Heitor Pinto da

Animal Industry (*Instituto de Biologia Animal da Diretoria Geral do Departamento Nacional de Indústria Animal*), an agency within the Ministry of Agriculture. On november 14, 1938, he was summoned via the *Diário Oficial da União* to regularize his situation or face the accusation of abandoning his post. Brasil. Ministério da Agricultura. Departamento Nacional da Produção Animal. Divisão de Defesa Sanitária Animal. BRASIL. *Diário Oficial da União*, Brasília, DF, 14 nov. 1938. Seção I.

56 ARQUIVO PÚBLICO DO ESTADO DO RIO DE JANEIRO. Fundo Polícias Políticas do Rio de Janeiro, setor: Inquérito, notação: 7. VICENTE DE SABOIA LIMA, aos 27 set. 1943, Seção de Segurança Política/Polícia Civil do Distrito Federal.

57 ARQUIVO PÚBLICO DO ESTADO DO RIO DE JANEIRO. Fundo Polícias Políticas do Rio de Janeiro, setor: Alemão, notação: 21. Ofício nº54 (26 abr. 1943), do Major Olinto Oliveira para a Comissão de Defesa Econômica.

Luz e Silva, Moritz Muller, Hans Wilfreid Guenther Schwender, Walter Paulo Seeling, Johan Carl Ahrens, Epimenedes Paes Leme, Mario Neves de Faria, José Custodio Campos da Paz, and Tarquino de Souza Filho. This same month, all the people cited were arrested, and the Germans were sent to the Ilha das Flores prison and released at random according to the results of the investigations.⁵⁸

On July 31, 1943, Theodor Hermann Kaelble was arrested on charges of colluding with the Nazi regime by participating in Nazi propaganda in Brazil and practicing “acts of economic sabotage”. In testimony the following day, he revealed that his true intention was to nationalize the businesses to protect them from the Brazilian government in case of a rift with Germany. This does not correspond with testimony given by Saboia Lima on September 27, which stated that nationalization had been desired for some time by the parent companies in Germany and the German partners who wanted to separate themselves from the companies. Kaelble was detained for 27 days in the prison at Ilha das Flores.⁵⁹ It is likely that Kaelble remained in Brazil during the conflict, because when Bayer was reorganized in Brazil he was considered to run it again.

Even after taking control of Bayer and its dependent organizations, the Brazilian government decided to liquidate the company in October of 1943.⁶⁰ Two years later, all the patents for inventions by Química Bayer Ltda., Farmaco Ltda., and the Behring Institute for Experimental

58 ARQUIVO PÚBLICO DO ESTADO DO RIO DE JANEIRO. Fundo Polícias Políticas do Rio de Janeiro, setor: Inquérito, notação: 7. Relatório da Polícia Civil do Distrito Federal. Copy of Ofício nº371 of sep. 01, 1943, relating to the investigation into the nationalization of the enterprises within Bayer’s organizations.

59 ARQUIVO PÚBLICO DO ESTADO DO RIO DE JANEIRO. Fundo Polícias Políticas do Rio de Janeiro, setor: Diversos, notação: 14. Departamento Federal de Segurança Pública, Ministério da Justiça e Negócios Interiores.

60 DECRETO Nº 13.560, DE 01 DE OUTUBRO DE 1943. Inclui nos efeitos do decreto lei nº 4.166, de 11 mar. 1942, as empresas que menciona, e da outras providências. Available at: <http://www2.camara.leg.br/legin/fed/decret/1940-1949/decreto-13560-1-outubro-1943-467298-publicacaooriginal-1-pe.html>; Accessed: sep. 26, 2016.

Therapeutics were ceded to the Brazil Central Foundation (Fundação Brasil Central).⁶¹ With the end of the war, restitution of assets belonging to 'Axis subjects' was made by the Brazilian government, with the exception of assets and capital pertaining to some companies which would proceed through the Compensation Fund. The situation for IBTE and the other companies in the consortium was unique, because with the 1942 nationalization they could no longer be classified as foreign companies, but as nationals collaborating with the enemy. Consequently, Saboia Lima and Johann Ahrens, who requested the return of assets pertaining to Química Bayer Ltda. in January 1951, encountered great difficulty in attempting to recover the company (C. M. Silva, 2013). The Behring Institute was resumed in 1955, separately from Bayer, since IG Farben had been dismantled at the end of the war.⁶²

The Brazilian lawyer Vicente de Saboia Lima represented the interests of IG Farben to the Brazilian government during this period, and also served as a partner in some of the consortium's subsidiaries in Brazil. As a proxy for Behringwerke A.G. and Drugofa G.m.b.h., Saboia Lima participated in four more companies which operated in biomedicine, energy, and chemicals (C. M. Silva, 2013). He was consequently considered equivalent to the enemy in July of 1944 and was subjected to a series of limitations.⁶³

61 DECRETO-LEI Nº 8.104, DE 18 DE OUTUBRO DE 1945. Doa à Fundação Brasil Central patentes de invenção, marcas de fábrica, modelos de utilidade, desenhos ou modelos industriais e de comércio, títulos de estabelecimentos, insígnias e frases de propaganda incorporadas ao Patrimônio Nacional, e dá outras providências. Available at: <http://www2.camara.leg.br/legin/fed/declei/1940-1949/decreto-lei-8104-18-outubro-1945-378771-publicacaooriginal-1-pe.html>; Accessed: July 26, 2016.

62 Angabe zur Entwicklung der Auslands-Aktivitäten um Bereich des Behringssortimentes ab 1932, 22 nov. 1988. Behringwerk-Archiv Marburg, Nr. 460.

63 DECRETO Nº 15.965, DE 03 DE JULHO DE 1944. *Inclui nos efeitos do Decreto-lei n.º 4.166, de 11 de março de 1942, a pessoa (Doutor Vicente de Saboia Lima) que menciona.* Available at: <http://legis.senado.leg.br/legislacao/ListaPublicacoes.action?id=16920&tipoDocumento=DEC&tipoTexto=PUB>; Accessed: July 26, 2016.

CONCLUSIONS

A planned deeper analysis of the other Latin America branches will bring more awareness to the understanding of the biopharmaceutical markets of the 1930s and 1940s in the continent. As Rio branch was the first and a venture to the creation of the other three branches, we chose to investigate it solely, although its role will be better known after more investigation of Buenos Aires, Mexico City and Bogotá branches. The transnational perspective adopted allows us to see the enterprise like a international actor and not a German one, although its politics, business and science had strong ties with German national culture. We intended to contribute to the transnational history by highlighting a interwove of different interests, individuals, objects and ideas, occasionally linked to national politics, but sometimes connected to business and professional demands. An initiative that the historical work on cultural diplomacy and great power dispute of influence in Latin America had already demonstrated.

Work on German cultural diplomacy in Latin America has shown that the German presence in this region was much larger and more significant than has been reported so far. Brazil's role as one of the main stages for the initiatives of this diplomacy is explained by more than one aspect. Its large population, a sizable percentage of German descendants, as well as its geopolitical and economic importance in the region were instrumental to Germany's investment in the dispute for influence in Brazil. During World War II, Brazil's geopolitical importance became evident when American bases established in the northeast of the country supplied the Allied front through the Atlantic and African routes (Alves, 2002).

In the case of Behringwerke, the main attraction to settle in Brazil was the country's large consumer market, which may have only been second to the United States, and new prospects arising from expanding herds of livestock. Refrigeration permitted continuous expansion in livestock rearing and consequently generated continuing demand for veterinary products. This is one of the main reasons behind Behringwerke's

investment in expanding within South America, one of the regions with the most investments in extensive livestock raising as the nineteenth century gave way to the twentieth century.

Investigation of the company's documents provides a more critical view of the activities of the pharmaceutical industry by allowing us to perceive that commercial interests governed the initiatives and decisions made by its managers. But those interests should not be so flagrant when selling products for human relief as we have seen by the attempt to give a status of medical research institute for IBTE. The choice of Rio de Janeiro as the first subsidiary sought financial security, since members of Behringwerke were already familiar with the context in the Brazilian capital. This choice was not based on the health needs of the Brazilian population, and the company's expansion into other Latin American capitals also was not based on these demands.

The intention here is not to emphasize what is already understood: companies seek to remain profitable. Our intention, especially through the study of companies dedicated to producing objects used in the treatment of disease, is to understand how science is governed by socially and historically distinct human choices. The organization that science took from the second half of nineteenth century onwards corresponds to a period of large commercial possibilities due to communication expansion. To BW those possibilities permitted enrichment of its "microbiological capital" in some of the tropical areas of the planet, that is, lead to improvement of its capacity to search, identify and use new microorganisms.

The events that unfolded with the outbreak of World War II show that the Rio IBTE's strategies had to adapt to the circumstances resulting from the political and military interests of the National Socialist government. Despite the IBTE's precarious situation resulting from Brazil's entry into the war, it managed to maintain good levels of production and connection with the other Latin American subsidiaries until 1943, when it was confiscated.

The confiscation of the IBTE and Bayer by the Brazilian government (unlike the motive which was publicized) was not motivated by

suspensions of threats to national security, but instead by the lucrative and vital importance of the products that these German companies provided to the Brazilian market. Both were placed under federal administration soon after being included on the British blacklist, a clear political strategy to achieve economic advantage and profits. The possibility of confiscating Bayer and all the other companies connected to it meant an enormous gain in capital for the government, which exploited these companies at least until the 1950s, when the process of returning them began.

ACKNOWLEDGMENTS

We thank Dr. Ulrike Enke and Dr. Kornelia Grundmann from Behringwerk-Archiv in Marburg, and Hans-Hermann Pogarell from the Bayer Archiv/Leverkusen for the help during the research in the archives.

This material is based upon work supported by the financial resources of the Programa Nacional de Pós-Doutoramento (PNPD) from Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (Capes).

Translated from Portuguese into English by:

Tracy Miyake.

BIBLIOGRAPHICAL REFERENCES

- ALVES, Vagner Camilo. *O Brasil e a Segunda Guerra Mundial: história de um envolvimento forçado*. São Paulo: Loyola, 2002.
- BAILEY, Thomas A. The United States and the Blacklist during the Great War. *The Journal of Modern History*, vol. 6, n. 1, p.14-35, 1934.
- BENCHIMOL, Jaime Larry; TEIXEIRA, Luiz Antonio. *Cobras, lagartos & outro bichos*. Uma historia comparada dos institutos Oswaldo Cruz e Butantan. Rio de Janeiro: Editora UFRJ, 1994.
- BERTONHA, João Fábio. O Brasil, os imigrantes italianos e a política externa fascista, 1922-1943. *Revista Brasileira de Política Internacional*, vol. 40, n. 2, p.106-130, 1997.

- BIRLE, Peter (ed.). *Die Beziehung zwischen Deutschland und Argentinien*. Frankfurt am Main: Vervuert Verlag, 2010.
- CAVALCANTI, Juliana Manzoni. *A Trajetória Científica de Rudolf Kraus (1894-1932) entre Europa e América do Sul*: Elaboração, produção e circulação de produtos biológicos. Tese (Doutorado em História das Ciências e da Saúde) - Casa de Oswaldo Cruz/Fiocruz. Rio de Janeiro, 2013b.
- CAVALCANTI, Juliana Manzoni. Rudolf Kraus em busca do “ouro da ciência”: a diversidade tropical e a elaboração de novas terapêuticas, 1913-1923. *História, Ciências, Saúde – Manguinhos*, vol. 20, n. 1, p.221-237, 2013a.
- CHICOTE, Gloria; GÖBEL, Barbara (eds.). *Ideas viajeras y sus objetos: El intercambio científico entre Alemania y América Austral*. Madrid: Iberoamericana; Frankfurt am Main: Vervuert, 2011.
- COCKBURN, C.. International contributions to the standardization of biological substances: the League of Nations Health Commission. *Biologicals*, vol. 19, n. 3, p.161-169, 1991.
- CRITCHELL, James Troubridge; RAYMOND, Joseph. *A History of the Frozen Meat Trade*. An account of the development and present day methods of preparation, transport and marketing of frozen and chilled meats. London: Constable & Company LTD, 1912.
- DIETRICH, Ana Maria. *Caça às Suásticas: o Partido Nazista em São Paulo sob a mira da Polícia Política*. São Paulo: Associação Editorial Humanitas/Imprensa Oficial do Estado de São Paulo/FAPESP, 2007.
- DIETRICH, Ana Maria. *Nazismo Tropical? O partido nazista no Brasil*. São Paulo: Todas as Musas, 2012.
- DREIFUSS, René. *A Internacional Capitalista*. Estratégias Táticas do Empresariado Transnacional, 1918-1986. Rio de Janeiro: Editora Espaço e Tempo, 1986.
- ECKART, Wolfgang U.. Der grösste versuch, den die Einbildungskraft ersinnen kann - Der Krieg als hygienisch-bakteriologisches Laboratorium und Erfahrungsfeld. In: ECKART, Wolfgang U.; GRANDMANN, Christoph (eds.). *Die Medizin und der Erste Welt Krieg*. Herbolzheim: Centaurus Verlag, 2003. p.299-319.

- FONSECA, Cristina Maria Oliveira. *Saúde no Governo Vargas (1930-1945): dualidade institucional de um bem público*. Rio de Janeiro: Editora Fiocruz, 2007.
- GERTZ, René E. Influencia política alemã no Brasil na década de 1930. *Estudios Interdisciplinarios de America Latina y el Caribe*, vol. 7, n. 1, p.85-105, 1996.
- GRADMANN, Christopher; SIMON, J.. Introduction: Evaluating and Standardizing Therapeutics Agents. In: GRADMANN, Christopher; SIMON, J. (orgs.). *Evaluating and Standardizing Therapeutics Agents, 1890-1950*. Palgrave Macmillan, 2010. p.01-12.
- HAYES, Peter. *Industry and Ideology: IG Farben in the Nazi era*. New York: Cambridge University Press, 2001.
- HOMBURGER, Froben. *Die Behringwerke von 1929 bis 1945 – Eine Fallstudie zum Verhältnis von Industrie und Staat im Nationalsozialismus*. Diplomarbeit im Fach Politikwissenschaft. Marburg: Philipps Universität, 1993.
- JOHNSON, Jeffrey Allan. The academic industrial symbiosis in German chemical research, 1905-1939. In: LESCH, John E. (ed.). *The German Chemical Industry in the Twentieth Century*. Dordrecht, Boston, London: Kluwer Academic Publishers, 2000. p.15-56.
- JÜRGEN, Link. Zur Diskurgeschichte des Normalismus - Aufstieg und Ausbreitung eines Dispositiv-Netzes. In: JÜRGEN, Link. *Versuch über den Normalismus: wie Normalität produziert wird*. Opladen/Wiesbaden: Westdeutscher Verlag, 1999. p.185-312.
- KOBRAK, Christopher. *National Cultures ans International Competition. The Experience of Schering AG, 1851-1950*. New York: Cambridge University Press, 2002.
- LANGDON, Esther Jean; WILK, Flávio Braune. Antropologia, saúde e doença : uma introdução ao conceito de cultura aplicado às ciências da saúde. *Revista Latino-Americana de Enfermagem*, vol. 18, n. 3, p.173-181, 2010.
- LINDNER, Stephan H.. *Inside IG Farben: Hoechst during the Third Reich*. New York: Cambridge University Press, 2011.
- LOCHERY, Neill. *Brasil: os frutos da guerra*. Rio de Janeiro: Intrínseca, 2015.

- LÖWY, Ilana. Biotherapies of chronic diseases in the interwar period: from Witte's peptone to Penicillium extract. *Studies of History, Philosophy of Biological and Biomedical Sciences*, vol. 36, p.675-695, 2005.
- MAZUMDAR, Pauline M. H.. The State, the Serum Institutes and the League of Nations. In: GRADMANN, Christopher; SIMON, Jonathan (eds.). *Evaluating and Standardizing Therapeutics Agents, 1890-1950*. Basingstoke: Palgrave Macmillan, 2010. p.118-138.
- MORAES, Maria Inés. Crescimento, tecnologia y competitividade en la ganadería uruguaia entre 1870-1930. In: HEINZ, Flávio M.; HERRLEIN, Ronaldo (eds.). *Histórias regionais do Cone Sul*. Santa Cruz do Sul: EdUnisc, 2003. p.269-292.
- PERAZZO, Priscilla Ferreira. *Prisioneiros da Guerra: os "súditos do Eixo" nos campos de concentração brasileiros (1942-1945)*. São Paulo: FAPESP, 2009.
- PILCHER, Jeffrey M.. Empire of the "Jungle": the rise of an Atlantic refrigerated beef industry, 1880-1920. *Food, Culture & Society: An International Journal of Multidisciplinary Research*, vol. 7, n. 2, p.63-78, 2004.
- QUINTANEIRO, Tania. Dilemas da cooperação: conflitos gerados pela política das "Listas Negras" no Brasil durante a Segunda Guerra Mundial. *Revista Brasileira Política Internacional*, vol. 49, n. 2, p.78-98, 2005.
- QUINTANEIRO, Tania. O mercado farmacêutico brasileiro e o esforço de guerra norte-americano. *Estudos Históricos*, vol. 29, p.141-164, 2002.
- RAHMEIER, Andrea Helena Petry. As relações diplomáticas entre Brasil e Alemanha, no período de 1937 e 1942. *História Unisinos*, vol. 17, n. 2, p.168-178, 2013.
- RIBEIRO, Maria Alice Rosa. Lições para a História das Ciências no Brasil: Instituto Pasteur de São Paulo. *História, Ciências, Saúde- Manguinhos*, vol. 3, n. 3, p.467-484, 1996.
- RIBEIRO, Maria Alice Rosa. Saúde pública e as empresas químico-farmacêuticas. *História, Ciências, Saúde — Manguinhos*, vol. 7, n. 3, p.607-626, 2000.
- ROCK, David. A Argentina de 1914 a 1930. In: BETHELL, Leslie (ed.). *História da América Latina: de 1870 a 1930*, vol. V. São Paulo: EDUSP, 2008. p.543-608.

- ROLIM, Marlom Silva; SÁ, Magali Romero. A política de difusão do germanismo por intermédio dos periódicos da Bayer: a Revista Terapêutica e O Farmacêutico Brasileiro. *História, Ciências, Saúde – Manguinhos*, vol. 20, n. 1, p.159-179, 2013.
- RUTSCH, Mechthild. Aportación e influencia de algunos científicos alemanes en la antropología de México (siglos XIX y XX). In: CARRERAS, Sandra; ZEITER, Katja Carrilho (eds.). *Las ciencias en la formación de las naciones americanas*. Madrid: Iberoamericana; Frankfurt am Main: Vervuert, 2014. p.229-248.
- SÁ, Magali Romero *et al.*. Medicina, ciência e poder: as relações entre França, Alemanha e Brasil no período de 1919 a 1942. *História, Ciências, Saúde – Manguinhos*, vol. 16, n. 1, p.247-261, 2009.
- SÁ, Magali Romero; SILVA, André Felipe Cândido. La Revista Médica de Hamburgo y la Revista Médica Germano-Ibero-Americana: diseminación de la medicina germánica en España y América Latina (1920-1933). *Asclépio, Revista de Historia de la Medicina y de la Ciencia*, vol. 62, n. 1, p.07-34, 2010.
- SÁ, Magali Romero; VIANA Larissa M.. La science médicale entre la France et le Brésil: stratégies d'échange scientifique dans la période de l'entre-deux guerres. *Cahiers des Amériques Latines*, vol. 65, p.65-88, 2010.
- SILVA, André Felipe Cândido da. *A trajetória de Henrique da Rocha Lima e as relações Brasil - Alemanha (1901-1956)*. Tese (Doutorado em História das Ciências e da Saúde) - Casa de Oswaldo Cruz/Fiocruz. Rio de Janeiro, 2011.
- SILVA, André Felipe Cândido da. Raça, medicina tropical e colonialismo no Terceiro Reich: a expedição de Giemsa e Nauck ao Espírito Santo em 1936. *Estudos Históricos*, vol. 26, n. 52, p.347-368, 2013.
- SILVA, Carlos Medeiros. 'Legislação de guerra - Aplicação a firma brasileira - Recolhimento de bens do fundo de indenização - Comissão de reparações de guerra - Competência quanto à liberação de bens – "A Chimica Bayer LTD"'. *Revista de Direito Administrativo*, vol. 30, p.347-365, 2013.
- TARRUELLA, Alejandro C.. *Historia de La Sociedad Rural Argentina*. De la colonización española a nuestros días: radiografía de la oligarquía terrateniente. Buenos Aires: Planeta, 2012.

- THROM, Carola. *Das Diphtherie-serum*. Ein neues Therapie, seine Entwicklung und Markteinführung. Stuttgart: Wissenschaftliche Verlagsgesellschaft, 1995.
- VILAPLANA, Rafaela Dominguez; BUENO, Antonio Gonzalez. Las filiales farmacéuticas españolas del consorcio alemán IG Farbenindustrie AG (1939-1949): La Química Comercial y Farmacéutica S.A. e Instituto Behring de Terapéutica Experimental S.A. In: BUENO, Antonio Gonzalez *et al.*. *Homenagem ao Prof. Dr. José Luiz Valverde*. Granada: Sociedad de Docentes Universitarios de la Historia de la Farmacia de España, 2001. p.457-493.
- WEGNER, Robert; SOUZA, Vanderlei Sebastião de. Eugenia ‘negativa’, psiquiatria e catolicismo: embates em torno da esterilização eugênica no Brasil. *História, Ciências, Saúde – Manguinhos*, vol. 20, n. 1, p.263-288, 2013.