The career of Henrique da Rocha Lima and German-Brazilian relations (1901-1956)

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Abstract

The career of Henrique da Rocha Lima is closely linked to cultural and scientific relations between Brazil and Germany. He pursued his scientific work at biomedical research institutions in both countries, but it was in Germany that he attained international standing, thanks to his research in the fields of microbiology, pathology and tropical medicine. His prestige and active participation in both Brazil's and Germany's scientific communities meant he was able to further academic interchange between both nations, mobilizing many people and institutions to contribute to this process. I present the obstacles and challenges faced in studying this complex character, whose career sheds light on the machinations of international scientific relations and some socio-historical processes that marked the institutionalization of science in Brazil.

Keywords: Henrique da Rocha Lima (1879-1956); scientific careers; Brazilian-German relations; world wars; ambassador-scientist.

It was while working on some research for my Masters thesis (Silva, 2006) into the coffee berry borer, a pest that threatened to bring Brazil's main export industry to its knees in the 1920s, that I first came across a wealth of documentation concerning Henrique da Rocha Lima (1879-1956). The papers are scattered amongst the 180,000 or so documents that comprise the historical archives of Biological Institute for Agricultural and Animal Defense (Instituto Biológico de Defesa Agrícola e Animal), created in São Paulo in 1927 as an offshoot from a scientific committee formed to tackle the pest. Rocha Lima was head of the department responsible for researching, treating and preventing veterinary diseases from 1928 until 1933, when he was appointed Director-General, remaining in the post until 1949. He is regarded as one of the key figures responsible for consolidating the scientific foundations and social legitimacy of the institute that is today called São Paulo Biology Institute (Instituto Biológico de São Paulo) (Ribeiro, 1997).

When I visited the institute a few years back in search of material about the coffee berry borer, I came across huge piles of paper yellowed by time that had been stored in a room by some of the institution's staff dedicated to preserving its memory. Chief among these was Márcia Maria Rebouças, who coordinated the initiatives that resulted in the founding of a memory center in 2007, when the institution marked its eightieth anniversary.

The Rocha Lima papers were easy to pick out from the others, as most of them were in German, a fact that excited my interest despite knowing full well that he had spent much of his adult life in Germany. After spending some time in Germany in 1901-1902 and 1906-1908, while on the staff of Manguinhos Serum Therapy Institute (Instituto Soroterápico de Manguinhos), later Oswaldo Cruz Institute (Instituto Oswaldo [1] Cruz, or IOC), he went on to develop what was arguably the most prolific period of his scientific career on German soil. In 1909, he spent eight months at the University of Jena's Institute of Anatomical Pathology on the invitation of his former professor, Hermann Duerck. From there, he moved to Institute for Maritime and Tropical Diseases (Institut für Schiffs-und Tropenkrankheiten) in Hamburg, where he stayed until 1927. First as a researcher and then as director of the pathology and virus department, which was set up especially for him, he engaged in research that earned him international recognition, especially for the identification of the etiological agent of endemic typhus, basing his work on research carried out during the First World War. Rocha Lima then identified a new category of microorganisms: rickettsiae. This in turn gave rise to the discovery of a number of rickettsial diseases, which are today characterized by the presence of skin lesions, fever, malaise, headache, prostration, and an enlarged liver and spleen. In 1927, during the last of the four trips he made to Brazil that decade, Rocha Lima was invited to join São Paulo Biology Institute, which Arthur Neiva had just founded in São Paulo in the wake of an almost four-year-long period at the helm of a campaign to fight the coffee berry borer.

On the completion of my master's thesis, I took part in a research project on the history of tropical medicine at Oswaldo Cruz Institute (1908-1940).[2] One very important factor for the structuring of this field of experimental medicine at the time, not only at the IOC but also at other institutions, was the scientific exchange established between Brazil and Germany, as already noted in the comprehensive study by Benchimol and Sá (2004-2007) of the intellectual output of Adolpho Lutz. Rocha Lima seemed to have played

a key role in this dynamic. Further, the existing historiography of IOC highlights how important Rocha Lima's training of the young doctors recruited by Oswaldo Cruz (including Neiva) was for consolidating the institution's scientific research tradition, especially in the terrain of anatomical pathology, and also in assuring its international projection, resulting in its visibility amongst Brazilian public opinion (Stepan, 1976; Benchimol, 1990; Benchimol, Teixeira, 1993).

Further, the existing historiography of IOC highlights how important Rocha Lima's training of the young doctors recruited by Oswaldo Cruz (including Neiva) was for consolidating the institution's scientific heritage, especially in the terrain of anatomical pathology, and also in assuring its international projection, resulting in its consolidation amongst Brazilian public opinion (Stepan, 1976; Benchimol, 1990; Benchimol, Teixeira, 1993).

Even so, one of the leitmotifs of the memorialistic output devoted to Rocha Lima[3] is the "silence that surrounds his scientific importance, even in his own country" (USP, 1998, p.51).[4] His identification with Germany, which he served during the World War I and from whose government, under the premiership of Adolf Hitler, he received a medal in 1938, seem to have cast a shadow over the memory of this Brazilian scientist. The almost absolute monopoly of English as the lingua franca of science from 1945 onwards, supplanting the prior hegemony of French and German, also makes Rocha Lima's work less widely accessible, since German was his language of choice for most of his published scientific output. Further, the fact that few Brazilian historians or memorialists are familiar with German – a subject I will go into in greater depth later – has only exacerbated this silence. Ultimately, the fact is that there are no historiographical studies on Henrique da Rocha Lima, even in the context of so many studies of Brazilian scientists being produced as part of the recent revival of the history of science.

These circumstances and my growing interest in the subject as I was undertaking my masters research inspired me to submit a doctoral project to the History of Science and Health Program at Casa de Oswaldo Cruz in 2006, to study the career of Henrique da Rocha Lima, especially his contribution towards the furthering of German/Brazilian scientific relations. Jaime Larry Benchimol, professor and researcher at Casa de Oswaldo Cruz, who had supervised my masters, agreed to guide me through the doctorate. We then set a time frame for the research, starting in 1901, when Rocha Lima graduated from the Rio de Janeiro School of Medicine (Faculdade de Medicina do Rio de Janeiro) and made his first trip to Germany, and finishing in 1956, the year of his death. This half century witnessed Germany's struggle to gain international consolidation for its science and culture, its efforts to reinstate them after the World War I, and their collapse during World War II. Rocha Lima was greatly marked by these highpoints and lowpoints, for his professional identity, personal agenda and standing as a scientist were largely molded by his close association with the science and culture of the country that featured in the two most devastating conflicts of the twentieth century.

In the next section, I will set out some of the hurdles and reflections that have arisen in the course of this toilsome research effort that has yet been truly rewarding for the doors it has opened for me.

Ein Stein mitten im Weg (a stone in my path)

My greatest obstacle was clear the moment I chose my subject of study: I would have to learn German, which is hard for speakers of Portuguese and surely one of the main factors impeding Brazilian historians from gaining greater familiarity with German culture. Indeed, this issue was pivotal in assessing the feasibility of the undertaking, since it would take two years at the very least to gain the level of linguistic competence required to start to penetrate the content of the amassed documentation concerning Henrique da Rocha Lima. Interestingly, in the 1920s Rocha Lima himself was insistent about the need for Germany to invest in cultural propaganda as a way of side-stepping the language issue. When he was appointed Director of São Paulo Biology Institute, he even hired a German secretary to give free German lessons to the young researchers, thereby strengthening the newly-founded institution's ties with its 'scientific fatherland'. From then on, it turned out ranks of young scientists versed in German, including José Reis, Agesilau Bitancourt, Maurício Oscar da Rocha e Silva, Adolpho Martins Penha, Juvenal Ricardo Meyer and Otto Bier. As no such privilege was available to me, I simply enrolled at a German language school and racked my brains for alternative ways of getting round the language barrier in the short term.

Providential aid came in the form of a grant from Brazil's National Council for Scientific and Thecnological Development (CNPq) received thanks to my supervisor's submitting a project on Rocha Lima for a humanities grant in 2007. The sum received was not, however, enough to cover the cost of translating the mass of correspondence, letters and scientific papers involved. Indeed, at that time I did not even know quite how many papers there were on Rocha Lima. It was only in that same year that the document archives at São Paulo Biology Institute started to be catalogued, having been transferred to new premises at the recently created memory center. Working under Márcia Rebouças, the team started classifying the documents relating to Rocha Lima, obviously giving precedence to those written in Portuguese. The German papers were set aside but not identified. On my visits to the archive in São Paulo, I took some first steps in cataloguing the documents in German: I identified the longest series of correspondence and the topics that involved the characters and institutions I was already familiar with. But in my inability to understand their content, I was still on shaky ground, and simply tried to take to Rio de Janeiro as many scanned papers as possible to reduce the number of trips I would have to make to São Paulo. I should add here that this work was only possible thanks to the unrestricted access I was granted to the archives, the scanner and the computer, for which I indebted to Márcia Rebouças.

Meanwhile, I pursued my German studies at the Goethe-Institut in Rio de Janeiro, tripping up over noun genders, declensions and a syntax that was far removed from my native Portuguese. I did make progress as time passed, but Rocha Lima's correspondence was still quite beyond me. The CNPq grant would be enough to translate just a fraction of the material selected. We then negotiated a solution with a translator that proved very successful: the scanned material, which I transcribed, was translated orally, greatly reducing the translation costs and time taken, while this hybrid method had the added advantage

of helping me further my learning of the language. The CNPq grant ultimately covered the translation of some three hundred documents, totaling around eight hundred pages.

There were two factors that were crucial to the success of the method employed: the translator had been acquainted with interpreting scientific correspondence and literature from the period during the publication of *Obra completa de Adolpho Lutz* (The complete works of Adolpho Lutz) coordinated by Benchimol and Sá (2004-2007), and was also a historian with particular interest in the history of science.

The obstacles and solutions presented thus far relate only to the source material. Now, we will look at the not insignificant hurdles of a cognitive nature that were encountered as I started to unveil the facets of a man whose complexity did not lend itself to simplifications and formulaic solutions.

Framing the research

A researcher's relationship with their research subject is always dynamic and subject to advances, retreats and change, and it is from this dynamic that historical knowledge is constructed. I am writing this paper in the middle of this process, without yet having a clear view of my destination, which is what makes this such a propitious moment for presenting the dilemmas and false leads encountered during my study of the career of Henrique da Rocha Lima.

In the original project, my proposal was to study his professional life, especially the role he played in coordinating scientific relations between Brazil and Germany, but I did not yet have a clear idea of what the nature of these relations might be nor the most fitting theoretical framework by which to address them. I started to find some promising leads as I took the graduate disciplines at Casa de Oswaldo Cruz and discussed the issues with my supervisor and Magali Romero Sá, who became my official co-supervisor.

Brazilian historiography has not given due attention to the country's scientific contact with the German speaking world. This is certainly in part due to Brazilian historians' relative lack of familiarity with the language and culture of Germany as compared to that of France, England and America, which is the inevitable outcome of these countries' respective influence, both past and present, on Brazilian intellectual life.

When Brazilian historians turn their attention to Brazilian-German relations in general, they tend to concentrate on different aspects of German immigration, such as its contribution to Brazilian nation building, as well as issues relating to ethnic identities and integration on a social and political level. When addressing international relations, Brazilian historiography tends to emphasize the political and economic spheres, while largely neglecting the importance of culture, science included, in the power plays amongst nations. Studies into scientific exchanges between the two countries in question have focused on the period prior to World War I and are predominantly about natural history and ethnography.[5]

Medicine is one of the most fascinating and little-studied spheres in which the cultural relations between Brazil and Germany were played out. One of my working hypotheses, which has been fully confirmed to date, is that Rocha Lima was one of the leading promoters

of these bilateral relations in the first half of the twentieth century. The importance of his intellectual output on microbiology, pathology and tropical medicine and the professional network he built up were enough to assure him full membership of Germany's medical and scientific community, an almost unique feat amongst his peers and one that gave Rocha Lima the opportunity to make decisive contributions towards the furthering of scholarly collaboration between the two nations.

The studies undertaken in recent years into the history of medicine and the life sciences show that Brazil was not in fact on the outskirts of international science. At the cusp of the twentieth century, its position in this sphere was being strengthened by the publication in foreign journals of studies undertaken in Brazil by researchers who had been either partially or entirely educated in European academic establishments, mostly in Germany and France. The international repercussion of studies published in French or German in Brazil, the participation of Brazilian physicians and researchers in international conferences, the strengthening of Brazil's biomedical research and public health institutions, and the growing exchange of biological materials and other data of relevance to foreign science all conspired to enlarge Brazil's web of contacts with the international community, although perhaps 'communities' would be more appropriate, given that the networks by which knowledge was spread and scientific reputations were made was still divided by major national rivalries and rifts.

The analysis of the source material has revealed the many-layered contacts set up by Rocha Lima with international partners and the projection he achieved in Brazilian and German society in his day. The fact that he gained such standing and was embraced by the establishment of a leading center of research and learning from the Old World clearly sets him apart from his peers. As Levi (1996, p.176) suggests, this uniqueness should be understood as an apparent diversion from the norm, but in a "historical context that justifies it."

My idea of using the career of one man as the backbone for a broader analysis of scenarios and processes is in harmony with a current trend in favor of biography as a legitimate, worthwhile approach in the writing of history. Mirroring this broader movement, the historiography of science, also inspired by the so-called social studies of science, has given new momentum to the writing of scientific biographies. Through them it has sought to investigate the circumstances and cultural resources that the production of scientific knowledge draws on and how this knowledge interacts with the social identity of its practitioners (Porter, 2006, p.315; Nye, 2006, p.324).

In the doctoral project I presented in 2006 at the graduate program in the History of Science and Health, I proposed framing my research around a single person's career before I had even gained much familiarity with my protagonist or with the literature on the scholarly exchanges in question. However, my initial objective of covering the whole of Rocha Lima's multifaceted career soon proved overly ambitious, forcing me to define a narrower analytical framework and build up a groundwork of empirical knowledge on my chosen character from which to launch into my study. Accordingly, I divided Rocha Lima's professional life into five phases, open to adjustment as required, to help me organize the work and split the bibliographical material into manageable chunks. These were:

(1) 1901 to 1909: starting with Rocha Lima's first trip to Germany to do graduate studies, and finishing with his return to Germany to take over as Director of the Institute of Pathology at the University of Jena. It covers almost the whole time he was at Manguinhos Serum Therapy Institute (renamed Oswaldo Cruz Institute in 1908), when he helped boost its standing amongst German scholarly circles and thus the international circulation of the knowledge produced there.

(2) 1910 to 1918: covering the period when Rocha Lima was on the staff at Institute for Maritime and Tropical Diseases in Hamburg, and the period when Germany was engaged in efforts to study and fight endemic typhus, first in Constantinople (now Istanbul), one of the places affected by the Balkan wars (1912-1913), and then in a Russian POW camp at the beginning of the World War I. It was during this period that he produced his most significant scientific work: alongside studies into this and other 'rickettsial' diseases, he also took forward studies he had begun at Oswaldo Cruz Institute into the anatomical pathology of yellow fever. He also investigated the histopathology of Carrion's disease, and blastomycosis and Chagas disease.

(3) 1919 to 1927: the beginning of this period is marked by the signing of the Versailles Treaty, which had a huge impact on German science, and specifically on the Institute for Maritime and Tropical Diseases; the end is marked by Rocha Lima's return to Brazil. In a bid to overcome the catastrophic social and economic conditions in post-war Germany and the isolation of its scientific community from its international peers, he and other scientists from the Tropeninstitut and other German institutions were deployed by the government and non-governmental agencies to promote German medicine and culture abroad, especially targeting the ruling social and political classes and intelligentsia of foreign nations. A policy was also set in action to encourage the forging of scientific ties with researchers from countries to the east and west of Germany, by which it hoped to regain its international dominance, mitigate the loss of its African colonies and open up markets for its industrial products, especially pharmaceuticals and medical ingredients.

(4) 1928 to 1942: this period stretches from when Rocha Lima joined São Paulo Biology Institute until when Brazil joined the World War II. During this period, he was engaged in consolidating the new institution's scientific position and re-engaging more closely with Brazilian science, without, however, neglecting his task of forging closer ties between Brazil and Germany, a country he was intimately bound to.

(5) 1942 to 1956: this marks the last but no less dynamic years of Rocha Lima's career. He engaged actively in the agenda defended by Brazilian scientific circles, and indeed stood out as one of the main proponents of the creation of Brazilian Society for the Progress of Science (Sociedade Brasileira para o Progresso da Ciência, or SBPC) in 1949, when he retired from São Paulo Biology Institute upon reaching seventy years of age. Throughout this period until his death in 1956, he continued to keep in close contact with his German peers.

As the third period of Rocha Lima's career (1919-1927) was the one I knew most about and interested me most, I decided to start by making more systematic investigations into

this period, which resulted in the first chapters presented at my qualifying examination in 2009. Most of the scanned and translated material from São Paulo was from this period. My greater familiarity with the period immediately after the World War I was thanks to the aforementioned project on the history of tropical medicine at Instituto Oswaldo Cruz, for which I had worked alongside Magali Romero Sá on the history of *Revista Médica de Hamburgo*, created in 1920 by Bernhard Nocht, Director of Institut für Schiffs-und Tropenkrankheiten, and Ludolph Brauer, Director of Eppendorf university hospital. Published mostly in Spanish, the journal was designed to divulge German medical research in the Iberian-American world, and was the mainstay of the movement to promote German science and culture in Portuguese- and Spanish-speaking countries. The periodical's contributors serve as a veritable 'radiograph' of the forces the Germans deployed in their mission to win back niches of influence in Latin America, the primary target of the cultural policy formulated in Hamburg and Berlin. Rocha Lima's involvement as an editor assured the inclusion of work by Brazilian scientists in the journal, as well as the publication of articles and reviews in Portuguese on the main studies published in Brazilian and German journals (Sá, Silva, in press).

The literature on tropical medicine at the time of the post-Versailles revisionism[6] that I gained access to in this research project helped me gain a better picture of Rocha Lima's involvement in this context. The sheer number of letters he exchanged with German and Brazilian diplomats suggests that he did indeed put great energy into fostering closer ties between both nations, following the guidelines received from the institute he worked for, while also seeking to serve his own interests and broaden his room for maneuver to develop his own agenda as a scientist. For both reasons, Rocha Lima's career is an excellent thread to follow if one wishes to penetrate the complex web of international scientific relations and shed some light on the groups of players, institutions and research dynamics on both sides of the Atlantic during the period in question. To study it, a number of specific questions would have to be addressed, which I set out in the next section.

An ambassador-scientist

In his study of the French university missions to Brazil between 1920 and 1940, and their relationship with the cultural policy devised by the French Ministry of Foreign Affairs, Hugo Suppo (2000) coins the term ambassador-scholar to refer to those people who aligned their professional strategies and ambitions with the interests and goals of their countries' diplomatic corps. Inspired on this work, I employed a similar term to classify other characters, including Rocha Lima, who adjusted their scientific agendas to suit the demands of foreign policy, mostly with the aim of recruiting partners overseas, fostering bilateral cooperation or taking part in multilateral organizations or international scientific associations. Ambassador-scientists like Rocha Lima were at the forefront of these cultural diplomacy policies, a hallmark of the twentieth century that was a direct reflection of nationalist and imperialist interests, and reinforced by the world wars (David-Fox, 2006).

In a book edited by Susan Solomon (2006), Germany's medical and scientific ties with Russia between the world wars are discussed, showing that scientists with a similar profile

were unusually common in that context in which science was commandeered by many States to serve their foreign policy requirements. Most of the articles in the book deal with individuals who actively promoted closer medical ties between the two countries, giving me some valuable insights into how to approach my analysis of Rocha Lima as an ambassador-scientist. The studies suggest that the history of scholarly exchange should be understood as one aspect of the history of the scientific development of the countries in question (p.11), and that the key to cooperation was hardly ever consensus, but rather the capacity of the scientists engaged in it to translate, negotiate, debate and simplify ideas and interests, thereby establishing 'bilingual' dialog (Hachten, 2006, p.159).

From this point on, it became clear that the historical circumstances that induced Rocha Lima to act as an advocate of scientific relations between Germany and Brazil would have to be made clear, as would his agendas and those of the social agents he interacted with, as well as the strategies set into play to combine strictly scientific activities with these intellectual exchanges and cultural diplomacy. It would be important to comprehend the decisions and stances taken by Rocha Lima in response to the options open to him in the circumstances which ultimately made the promotion of German/ Brazilian relations so central to his career between the two world wars. The literature consulted, the academic discussions held and the knowledge gradually acquired of the source information started to reveal how Rocha Lima and his partners effectively did science under the umbrella of these cooperation efforts, how they developed their research agendas, undertook their laboratory and field research, and simultaneously built up peer networks and relations with patrons and scientific stakeholders in both nations. To understand Rocha Lima's profile as an ambassador-scientist means having a clear portrayal of the individual traits that made it possible for him to move so easily in both Brazilian and German contexts. He was obviously helped by the academic standing he had achieved and his level of interaction with both scientific communities, which gave him considerable leverage in scholarly, political and diplomatic circles. But ultimately Rocha Lima's deftness in handling Brazilian and German relations would not have been possible if he had not had such total command of Germany's language and culture, which he had gained in his schooling and which suggests his family had Germanophile leanings. His father, Carlos Henrique da Rocha Lima, also a doctor, had been one of the founders of Rio de Janeiro Polyclinic (Policlínica do Rio de Janeiro), modeled on a similar institution in Vienna; his brother, Carlos da Rocha Lima, worked on Brazilian diplomatic missions in Germany.

The focus I ultimately chose to take sees Rocha Lima balancing his professional identity, scientific exchanges, political ambitions and ideological alignments within the larger picture of German-Brazilian relations and their changing historical configurations. However, this in no way exhausts the potential of hybrid characters such as Rocha Lima, who served not just as cultural intermediaries, but also crossed national frontiers. If, as Solomon (2006, p.16) points out, there is a relatively wealth of studies into the circulation of ideas, the transmission and adaptation of institutional models and the formation of scientific networks, there are far fewer on the personages who promoted scientific and cultural activities on this transnational plane. And this takes us back to one of Rocha Lima's most remarkable traits, noted at the beginning of this research note: his dual citizenship, implying

a sense of belonging and commitment at a time when overinflated nationalisms were forcing everyone to state unequivocally where their loyalties lay.

The task of understanding our ambassador-scientist leads us into the grinding cogs of international science in the first half of the twentieth century and its tug-of-war with nationalistic interests, which were particularly heightened at the time. The literature and the primary sources consulted show that the World War I shook up international science and the relationship between science and politics, all of which had a major impact on Rocha Lima.

National and international, Brazil and Germany in the world

As we follow Henrique da Rocha Lima, we are led to the heart of international science and its national counterparts in the first half of the twentieth century. By furthering the inclusion of science from Brazil in the "German branch of international science" (Cukierman, 2007) – the backbone of Oswaldo Cruz's institutional project (Benchimol, 1990; Stepan 1976) – Rocha Lima seems to have channeled the ambitions of a whole generation, assuring a place for professional science by bringing locally-produced knowledge into line with internationally-accepted standards, among other things. In *A ciência como profissão* (Science as a profession), Dominichi Miranda de Sá (2006) addresses this issue very creatively. Also, my consultation of the specialized historiography showed that international science is something that should be of interest more as a socially and historically determined phenomenon than as a universalist ethos. In this sense, the efforts to transcend local barriers cannot be seen as the inexorable outcome of scientific activity, but as deliberate choices made by certain actors at specific coordinates in time and space. Alongside other dimensions of social life, science contributed towards creating the international space and the multiple activities and organizations which granted it substance. In their masterly work on the subject, Crawford, Shinn and Sörlin (1993, p.36) stress the idea that scientific internationalism took on different meanings according to the circumstances in which it was exercised. In other words, it is not a fixed pattern of science, but rather the product of different forms of political engagement. Other authors show that one thing that is inherent to scientific activity, aside from the inescapable conflict between cooperation and competition, is a tension between the desire to attain universal meaning and the impositions of nationally-bound academic cultures and political and institutional projects (Forman, 1973, p.153). This tension has been part and parcel of science for at least 150 years, ever since the conception of the nation-state on the idea of particularities, and science on the idea of universalism (Góes Filho, Araújo, 2004, p.170).

Rocha Lima's professional career began at the height of internationalism as a practice and value, soon to be shaken by the outbreak of the World War I. The previous decades' efforts to foster internationalization gave way to a fragmentation of the scientific arena into factions (Kevles, 1971). The war consolidated a new type of relationship between science and military power, and imposed the perception that mastery of scientific knowledge was central to national survival, thereby putting science at the heart of the power struggles between nations and center stage in their propaganda efforts (Crawford, 1988, 1992;

Crawford, Terry, Sörling, 1993; Petitjean, 1996, p.31). In the following years, scientists and politicians tried to revive the practices and ethos of internationalism, but they were cut short by the World War II, which imposed a major restructuring of the scientific world. Internationalism gained new impetus and was hailed as a core ingredient for a world order founded on peace and mutual consent. A concrete outcome of this ideal was the creation of Unesco. Paulo Carneiro, Carlos Chagas Filho and other figures were important in coordinating Brazilian science with the agendas of these new forums (Maio, 2004).

Intimately bound as he was to the waxing and waning fortunes of German science, Rocha Lima's career and identity were marked by his association with a country that was the defeated enemy in both world wars, emerging from the second as the protagonist of the most heinous act ever known to human history, the Holocaust, arguably the most depraved expression of a combination of politics, ideology and science. Meanwhile, Rocha Lima shared, to a greater or lesser degree, in the aspirations and dramas experienced by his fellow Brazilians. He personifies most strikingly the dilemma of those who sought to integrate Brazil into an increasingly internationalized scientific community, having to deal with the tension between promoting the science from the 'center', the only form capable of legitimizing his efforts in benefit of the 'periphery', but also, in loyalty to his country, often seeking to "relativize its importance" (Löwy, 2006).

In my bid to understand Brazil's place in international science without resorting to the unilateralism or eurocentrism typical of diffusionist conceptions, an all-too easy trap to fall into, or the center-periphery model, "whose corollary is a science with no social function" according to Polanco (1992, p.192), the conceptions put forward by this author were extremely helpful in understanding how Latin America as a whole took part in the globalization of European science, resulting in a system of knowledge marked by asymmetries of a contextual rather than structural nature (Polanco, 1990; 1992). Polanco shows that the relationships in the world of science are dynamic, subject to short- and long-lasting developments, changes in scientific leadership and the idiosyncrasies of each discipline. His perspective highlights the role of leaders in establishing intellectual and institutional forms of knowledge, which then become the standards for gauging what convention defines as good science. Educational facilities, research funding, and formal and informal access to information and scientific output drove students and scientists to migrate to institutions that promised a high level of education and academic prestige.

The structuring of this rocky terrain can only be comprehended by the historical analysis of empirical data, showing that Latin America's integration was neither spontaneous nor the "automatic outcome of cognitive processes" (Petitjean, 1996, p.25), but the fruit of deliberate choices made by scientists and other members of the ruling classes or the State. It is, then, of interest to understand how the flows of people – students and scientists – served as vectors for the expansion of European science and how the cross-fertilization of modern science with traditional systems of knowledge from Latin America – in our case, Brazil – resulted in such a "specific and complex" scientific tradition as the one being portrayed by studies referred to jointly under the label of science and empires (p.26).

It became clear to me that Brazil and Germany's scientific interchange must be seen as a two-way route, even if slightly one-sided. It assured the Germans access to facts and

artifacts, as well as the advantages to be gleaned from having their science and culture embraced thanks to their country's cultural diplomacy efforts. Meanwhile, Brazilians gained access to German skills and technologies, educational opportunities in prestigious centers of learning, and the opportunity to divulge original research undertaken in Brazil, raising it to a whole new level of visibility, recognition and legitimacy on a broader scale. It is not unreasonable to suppose that Rocha Lima's efforts to combine such different sociocultural realities were marked by moments of compromise, tension and ambivalence. Just like others in his day engaged in similar tasks, Rocha Lima sought to foster bilingual dialog and accommodate interests that were not always naturally compatible. Following the agenda put forward by Gilberto Freyre (1987) in his investigation of the relationship between the north-east of Brazil (basically Recife) with the German-speaking world, I undertook to study the relationship "between facts, between personalities and communities, between personalities, communities and things, between personalities, communities and a social epoch and times ... . Of plays of relationships that vary with the subjects and objects in their interrelationships" (p.25).

My thought process throughout this research project – neither of which is complete – gave rise, as already mentioned, to an initial systematized report, which I presented at my preliminary oral examination in June 2009. Since then, I have had the chance to substantiate some lines of investigation, give up others, and review my assumptions. In April 2010 I leave for a seven-month stay in Germany, funded by a grant from Deutscher Akademischer Austauschdienst (DAAD). By researching in archives and libraries in Hamburg and Berlin and discussing with German academics, I will seek to enrich my research with new sources and ideas that will undoubtedly fill out the picture I have of Rocha Lima's career and the relationship between Germany and Brazil in the period in question. My studies in Germany will be supervised by Stefan Wulf, from Hamburg University, giving me a unique opportunity to draw on his profound knowledge of the history of the Institute for Maritime and Tropical Diseases and of German medical science in the first half of the twentieth century. There, I will gain a new perspective on the hurdles faced and rewards obtained by my chosen figure in his successful bid to attain a high standing in a geographically, socially and culturally distant reality from the one that had been the overriding influence in his formative years. It will hopefully also help me to better gauge these distances and bridge the gap that is inescapable for any historian: the time that separates me from Rocha Lima, which has so much to say about the "vicissitudes of scientific life", to borrow the title of a lecture he gave in 1949 (Rocha Lima, 1949).

NOTES

[1] There is some controversy as to Rocha Lima's priority, which dogged him even to the last years of his life. In 1909, Howard Taylor Ricketts (1871-1910) and Russell Morse Wilder (1885-1959) had described formations that Rocha Lima later named *Rickettsia prowazekii*. It would appear that Ricketts and Wilder had not unequivocally identified the microbe as being the etiological agent of endemic typhus, not least because Ricketts died of typhus before he could do so. Rocha Lima seems to have been the first to demonstrate experimentally the causal relationship between *Rickettsia prowazekii* and the disease. There is no consensus about this in the historiography of this episode.

[2] The project entitled European Theories and Biomedical Sciences in Brazil: Tropical Medicine at Manguinhos (1908-1940), coordinated by Magali Romero Sá, was undertaken between 2006 and 2008.

[3] For more on this, see Bier, 1956, 1979; Falcão, 1966, 1967; Faculdade de Medicina da USP, 1998; Guimarães, 1968; Moraes, 1968; Rebouças, 2009; Reis, 1956a, 1956b, 1976; Ribeiro, 1997; Rocha and Silva, 1956; Vieira, 2000.

[4] All quotations in other languages have been freely translated.

[5] For more on this, see Born, 2007; Frank, 2005; Hartmann, 1980; Hermannstädter, 2004; Junghanns, 2008; Kraus, 2004; Lisboa, 1997, 2003; Penteado Coelho, 1993.

[6] This expression and others like it – *Kolonialrevisionismus* [colonial revisionism] – refer to Germany's foreign policy between the two world wars and the attempts of the Weimar regime and National Socialism to have some clauses from the peace treaty reviewed, including those relating to the appropriation of Germany's colonies and protectorates (Wulf, 1994; Eckart, 1997; Niedhart, 1999).

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