

“Letters to a lady”: questions of gender and the dissemination of Darwinism in Brazil

Moema de Rezende Vergara

Museu de Astronomia e Ciências Afins – MAST/MCT

SUMMARY

Recent works on the history of scientific dissemination in Brazil have practically ignored the category of gender in their analysis. Thus, this article is intended to contribute to the content of a study of a specific practice of scientific disclosure of the 1800s, as exemplified by “Letters to a lady” written by Rangel S. Paio and published in the “O Vulgarizador”. In this case, the concept of gender makes it possible to understand the tensions between the masculine and feminine appearing in a series of letters meant for purposes of scientific dissemination, in which the author himself anticipated their gender content, insofar as he directed his attention to a public of ‘ladies’ in the Second Monarchical reign in Brazil.

Key words: Scientific dissemination; Darwinism; Gender.

Gender and Darwinism, in spite of their distinct backgrounds and meanings, have something in common: when placed on the agenda, they promote the discussion of current world views,¹ through discussions of the boundaries between nature and society.

Without doubt, considerations of the limits of the social and natural provides an inexhaustible source of reflection for the social sciences, principally in the intersection of the history of science and gender.² This intersection frequently generates biographies of female scientists which constitute a fertile path for the verification of contributions, resistance and challenges of the feminine in the practice of science. Yet, as Ludmilla Jordanova has pondered, gender is not simply a history of women or of men but a constellation of attributes associated with two (naturalized) forms of

¹ The author extends her thanks to the CNPq for the support provided for this research.

² Cf. Ilana LÖVY, 2000.

humanity; thus, its analysis gives us access to the way a particular society produces the knowledge frameworks it employs in understanding nature.³

In view of this premise, our readers should be informed that the present work is not a history of women in science but a study of specific practices of scientific dissemination of the 1800s, focusing on Rangel S. Paio's "Letters to a lady", published in *O Vulgarizador*. In this sense, the concept of gender aids our comprehension of the tensions between the masculine and feminine that appear in a series of letters written for purposes of scientific dissemination, in which the gendered content had already been anticipated by the author himself, insofar as he directs his attention to a public of 'ladies' in the second monarchical reign in Brazil.

The end of the 19th Century is of great interest to contemporary researchers, since the transformations which occurred in Brazilian society during that period contributed to the consolidation of different forms for the public presentation of science, turning it into a spectacle. In Rio de Janeiro, for example, there was already a public for scientific questions made up of people who attended the popular Glória conferences, visited the National Museum, went to the National Expositions and read papers and magazines to keep themselves informed on the successes of scientific institutions, both national and foreign.

The expansion of interest in scientific knowledge also had an influence on Brazilian intellectual life, since writers and scientists shared the same desire to build a civilized nation where science, art and literature would reflect an authentic 'Brazilian way of thinking', not devoted to copying and imitating other schools of thought. It was in this spirit that Rangel S. Paio wrote his letters. The letters offer elements for the analysis of the dissemination of Darwinism in Brazil through a literary scientific periodical, in the same period in which the discussions of this theme were on the agenda in the Brazilian intellectual environment.

There were several periodicals in circulation at this time that were not related to the scientific institutions. They were initiatives of 'men of letters' whose objective was the diffusion of scientific knowledge in the Brazilian intellectual environment, as a form of combating what they qualified as a 'climate replete with superstitions and backwardness'. *O Vulgarizador* could be considered an example of one of these initiatives, which was meant to be a weekly publication yet was unable to keep up the pace, putting out only 40 editions over the four years of its existence. Its editor, the Portuguese Augusto Emílio Zaluar (1825–1882), arrived in Brazil in 1849; in 1876 Dom Pedro II awarded him the title of *Cavaleiro da Ordem da Rosa* (Knight of the Order of the Rose) He published a variety of works in different genres, such as poetry collections, educational textbooks (geography, philosophy, general knowledge, moral education among others), biographies,

³ JORDANOVA, 1993, p. 474.

translations and some periodicals. His best known publications are *Peregrinações pela Província de São Paulo* (1860–1861), and *Doutor Benignus* (1875), touted as Brazil’s first science fiction⁴.

Between 1877 to 1878, *O Vulgarizador* published a series of five articles under the title “Darwinism: Letters to a lady”, all of which were signed by Zeferino Rangel de S. Paio. Paio (1838–1893) was born in Rio de Janeiro, into a modest family and found in the arts a form of social projection which led to his eventual employment as section chief in the Federal Capital’s Customs house⁵. Rangel S. Paio was one of the many men of letters who performed the role of ‘vulgarizers/disseminators of science’⁶, an expression that was widely used at that time to designate the activity of translating scientific knowledge into layman’s terms, making it ‘accessible to all intelligences’ without necessarily developing professional activity in the field of science.

In the midst of the numerous articles for scientific dissemination published in this period and dedicated to astronomy, the natural sciences and recent technological conquests, our attention is drawn to the fact that Rangel S. Paio directed his writings to a lady in order to explain Darwinism. This device is not, however, exclusive to the 19th century, since long before that one could find books for disseminating astronomy, such as *Entretiens sur la pluralité des mondes*, by Bernard de Fontenelle in 1686, and *Astronomie des dames* (1786), by French astronomer Joseph Jérôme Lalande. It was literature dedicated especially to women, who made up a reading public with its own characteristics, leading Lalande to ask his readership that they apply the same level of devotion that they had reserved for novels to the comprehension of astronomy.⁷

In the letters published in the *Vulgarizador*, Rangel S. Paio addressed a lady to whom he referred as D. Julia. Little is known about her, not even her surname; nonetheless, the author presents her as a “dilettante of good taste”. There is a hypothesis that this lady was actually a fictional construct of Paio’s, based perhaps on women of the Court who attended the National Museum’s public courses or the Glória conferences. There is no record in the *Vulgarizador* of possible answers from D. Julia; this we can deduce from the text through the questions the author supposes she would like to ask, thus providing the reader with the sensation that s/he is witnessing an imagined conversation. This is the first tension between the masculine and feminine presented in the text: the reading public presented with an image of a woman that has been formulated by the (male) author.

Apart from gender-related conflicts, the text’s dialogic structure shares similarities with *Diálogo sobre os dois maiores sistemas do mundo* (*Dialogue on the two biggest world systems*,

⁴ Cf. Augusto Victorino SACRAMENTO BLAKE, 1970.

⁵ Cf. SACRAMENTO BLAKE, 1970.

⁶ For the purposes of this work, we use the terms ‘dissemination’ and ‘scientific vulgarization’ as synonyms.

⁷ Apud Camille FLAMMARION, 1903, p. 15.

1632) by Galileu Galilei, viewed as one of the first scientific works written with purposes of popularization, written as it was in Italian and not Latin, the standard for theological and philosophical works. *Diálogo* was composed of three characters: Simplício, the Aristotelian; Salviati, defender of Copernicus' theses, or rather Galileu's alter ego, and Sagrado⁸, the spirited intellectual who acted as intermediary between the other two interlocutors. In the letters published in *O Vulgarizador*, D. Julia takes the place of Simplício, with enquiries that express the concerns of an outdated value system and worldview, while Rangel S. Paio had the same function as Simplício, in the sense that he clarifies his interlocutor's ponderings, convincing and bringing him/her closer to a new conception of the world. This can be seen in the following passage: "You maybe ask...how to connect this chain of beings that are so heterogeneous...in appearance?".⁹ This strategy provides the pretext to offer the public the first definition of Darwinism:

By means of the gradual evolution of one species into another, in ascendant-progressive order, in virtue of two great laws: those of natural selection and vital competition.

For the one, the first, beings are organized to conserve and perfect, widening everything good and useful they possess and abandoning what is bad or serves no purpose; in virtue of the other law, the call of combat in self-defense, the instinct to fight against other organisms, against inclemency, against temperature, against everything – [a being] wants to live at the cost of others and as such, in accordance with the laws of adaptation the strongest are transformed, acquire new elements, make use of new weapons and intone the hymn of victory while contemplating the corpses of those incapable of adapting to the conditions of resistance, those who succumbed to the attacks of their enemies, lying by the wayside.¹⁰

In this passage, one can observe what some analysts of the reception of Darwinism in Brazil believe to be the ideas that met with the widest acceptance, such as the 'struggle for life', 'natural selection' and 'survival of the fittest'. The author asserted that he wished to undo D. Julia's impression that these theories were something akin to the "dreams of Edgar Poe or the inspirations of Baudelaire",¹¹ as she supposedly would have claimed. Yet it is interesting to note that if he had truly intended to 'calm her', what he actually achieved was the composition of a quite shocking scene, in which the fittest were found lording over the 'corpses' of those vanquished by natural selection.

This disconcerted lady could perhaps have attended a conference by João Joaquim Pizarro, director of the zoological section of the National Museum between 1871 and 1883, who according

⁸ Cf. Alexandre KOYRÉ, 1991.

⁹ RANGEL S. PAIO, 1877a, p. 112

¹⁰ RANGEL S. PAIO, 1877a, p. 112.

to Batista de Lacerda was “a radical and exaggerated transformist” who in his lectures scandalized, more than once, the female auditorium by pointing out the common links between humans and monkeys.¹² However, according to Rangel S. Paio, what had motivated him to write those letters was a supposed conversation with D. Julia after a conference on desert plants given by Saldanha da Gama. There is no information as to whether this lecture was held in the National Museum, in the Popular Conferences of Gloria or in another institution.

The public conferences on Darwinism played to an increasingly numerous audience in Rio de Janeiro which included the assiduous participation of young people, the Emperor and even the ‘fair sex’¹³. Rangel S. Paio reported that he was surprised at the position taken by his friend who, contrary to Darwinism, reinforced some common gender stereotypes of the time:

It hurts me deeply to see you, my lady, you who are so generous, whose heart is open to all the harmonies and natural greatness, you who always has applause reserved for all of man’s great commitments, a place in all of the banquets of the intelligentsia, who looks well upon all noble force; it hurts me to see you aligned with the enemies of Charles Darwin.¹⁴

Although they both participated in the same circles in which scientific knowledge was disseminated, it was through the heart, rather than the mind that, according to Rangel S. Paio, D. Julia understood the world. The above passage also points to D. Julia’s presence at the banquets of the intelligentsia. This could be due to the efforts of the anti-Darwinist Louis Agassiz and his wife Elizabeth, who came to Brazil between 1865 and 1866 to research fish in the Amazon Basin in an attempt to disprove the evolutionary thesis. It appears to have been Elizabeth who requested the presence of women at her husband’s conferences, something hitherto unheard of. In a letter to her family, Elizabeth asserted that her husband’s second conference was even more packed than the first, and that the Emperor had sanctioned the presence of women, bringing with him his wife and daughter¹⁵. During the second half of the 19th Century, women’s presence in public spaces began to grow, not only to obtain scientific knowledge but to participate in the political discussions of the era. Therezinha Collichio affirms that, from 1869, the emergence of abolitionist propaganda made constant appeals to humanitarian sentiment, resonating among Brazilian women and increasing “women’s access to conferences and assemblies”.¹⁶

¹¹ RANGEL S. PAIO, 1877a, p. 112.

¹² Apud Regina GUALTIERI, 2003, p. 65.

¹³ THEREZINHA A. F. COLLICHIO, 1988, p. 45.

¹⁴ RANGEL S. PAIO, 1877a, p. 111

¹⁵ Apud Lorelay KURY, 2001, p. 160.

¹⁶ COLLICHIO, 1988, p. 44.

An example of one of these ‘banquets of the intelligentsia’ were the *Cursos Públicos* (Public Courses) held in the National Museum from 1870 to 1880 and publicized in the general press, which included *O Vulgarizador*. According to their creator, Ladislau Netto, these courses’ principal audiences were “ladies that in no other third level institution in the country would find so natural or easy an entrance”.¹⁷ It is worth remembering that the National Museum was an important research institution that disseminated Darwinism in Brazil, as can be observed in the articles published in its magazine, *Archivos do Museu Nacional (National Museum Archives)* as well as through its researchers - more precisely Fritz Müller, travelling ‘Museum’ naturalist recognized by Darwin himself, with whom he maintained correspondence until the English naturalist’s death.¹⁸

Thus it may be stated that there were a number of spaces dedicated to the dissemination of science in the capital of the Brazilian empire. Apart from the National Museum, there were the Gloria Popular Conferences. These conferences were held in public schools in the neighborhood of Gloria, in the Court Municipality, promoted by the councilor Manoel Francisco Correia, Imperial senator, who claimed that “ this tribunal, and those that are being set up in the Empire, make way for the opportune discussion of subjects deserving of national attention”.¹⁹ They were held on Sunday mornings and were announced beforehand in the most important papers of the time, such as the *Jornal do Commercio*, the *Gazeta de Notícias* and the *Diário do Rio de Janeiro*. Some of the papers printed the lectures – in full or in summarized form. According to councilor Correia, these conferences should be made available to everyone, since their principal objective was public instruction.

One of the institutions that, already in existence for two years, had attracted the public consistently were the Popular Conferences in the public school hall of the parish of Glória. The first was held on November 23, 1873; they have continued until the present without interruption, accustoming the city's public to this informative form of entertainment. ...we sow the seeds, in the firm belief that the well- known Brazilian patriotism will thus make the earth bear fruit.²⁰

According to reports from the era, the gallery was made up of a select public and included the presence of the imperial family, court aristocracy, liberal professionals and students.²¹ “It is not without satisfaction that I see completed today the 151st [conference] and second year of these

¹⁷ Apud Maria Margaret LOPES, 1997, p. 146.

¹⁸ Cf. Nelson PAPAVERO, 2003.

¹⁹ CORREIA, 1876, p.17.

²⁰ CORREIA, 1876, p. 17.

²¹ Maria Raquel da FONSECA, 1996.

conferences, which have continued regularly, thanks to the honorable participation of the Emperor and the illustrious public of this opulent city”.²²

One of the parish of Gloria’s heralded conference speakers was the doctor and teacher of Medicine in the University in Rio de Janeiro, Augusto Cezar de Miranda Azevedo, one of the first national defenders of Darwinism. He gave seven lectures between April and September 1875. Therezinha Collichio affirms that the trips Miranda Azevedo made to France, in 1873 and 1874 helped him become conscious of the importance of discussions that took place then in the Academia de Ciências (Academy of Science) of that country with Darwin as foreign correspondent. It seems clear to this author that it was natural for the young doctor, with a propensity for research and also controversy, to study the subject meticulously.

In his conferences Miranda Azevedo initially developed a historical synthesis of the sciences that proved Darwin's principles, from Greek philosophy to the present, moving on to criticism of Cuvier and Agassiz for their attacks on evolutionism and finishing with considerations on the practical consequences of Darwin’s theory. According to Therezinha Collichio, Miranda Azevedo’s arguments in favor of Darwinism and the applications it suggests reflect the characteristic features of Brazilian Darwinist thinking.²³

On reading Rangel S. Paio’s letters, it becomes clear that he preserved the structure of Miranda Azevedo’s conferences, some differences notwithstanding. This serves to reiterate Therezinha Collichio’s conclusions. Where Rangel S. Paio differs is in the effort he makes to conjugate the basic premises of Darwin's theory, predominant in Brazilian intellectual life, with the evolutionary ideas developed in the National Museum by Ladislau Netto and João Batista de Lacerda. The latter fused the idea of God with the theses of natural selection and awarded Lamarckist mechanisms a privileged role as causes of the transformation of the species. According to Regina Gualtieri, this can be understood within the context of the dissemination of Darwin’s ideas, granting certain flexibility in the comprehension of the origins of the variability of organisms.²⁴

In order to play his role as disseminator of science, Rangel S. Paio presented himself as an ‘imperfect’ teacher of Darwinism who despite his humble position in the ‘indefinite planisphere of science’, admired Darwin, ‘first great star, through his weak telescope’.²⁵ Even while recognizing his limitations in the face of his mission, the author did not want to leave his lady friend

²² CORREIA, 1876, p. 17.

²³ COLLICHIO, 1988, p. 111.

²⁴ GUALTIERI, 2003, p. 84.

²⁵ RANGEL S. PAIO, 1877a, p. 136.

in a state of ignorance; if she were indeed to be found in such circumstances, it was only because nobody had explained Darwinism to her.

The first point of resistance Rangel S. Paio tried to remove regarded the question of the common origin of all animals. To do this, he made reference to the famous phrase of Swiss naturalist Claparede, lecturer in the Faculty of Science in Geneva: "It as good to be a perfect monkey as a degenerate Adam!"²⁶

However, in admitting that the 'mosaic hypothesis' was merely symbolic, the author worried that this did not mean confusing Darwinism with atheism:

If Darwin found, as I am convinced, the secret to life, nothing in his theory leads to a negation of divinity.

It is through making humans in his image that all belief in God rests; no, my lady, a God presiding over creation through eternal, wise and sublime laws, a God- in principle- without form, incomprehensible to the weakness of our conception, a God seen in his works but in person, a mysterious God, a God being instead of a God man, made in image and likeness, it seems to me a God that better satisfies the idea of omnipotence.²⁷

Regina Gualtieri states that in the years 1870 to 1880 there were references in the National Museum to a evolutionism influenced mainly by Haeckel and by the differentiated adhesions to Darwin's that guided that institution. She shows that this was a worldwide tendency in which scientists and public alike rejected ideas judged as conflicting with their convictions and adopted those with which they identified. One question observed in Brazil as well as other countries was the acceptance of the mutability of the living world, yet without eliminating God's place in presiding over creation by means of eternal laws. Nonetheless, a good part of the Brazilian public rejected the idea of natural selection, interpreting it as a mechanism which did not give human beings the opportunity to play an active role in steering the course of evolution nor to react to changes in the environment, given that the non-adaptive would be eliminated. In these circumstances, this mechanism appeared to be irreconcilable with any divine action and in conflict with a theological vision of the world.²⁸

In another display of the force of his arguments, Rangel S. Paio tried to prove to D. Julia that Lineu's and Agassiz' conceptions were metaphysical expressions lost in an intricate labyrinth of hypotheses on the origin of the species and already obsolete in the face of the 'modern zoological school'. To demonstrate Darwinism's progress in relation to the other competing naturalists, Rangel

²⁶ RANGEL S. PAIO, 1877a, p. 112.

²⁷ RANGEL S. PAIO, 1877a, p. 112.

²⁸ GUALTIERI, 2003, p. 80-81.

S. Paio used the ideas of Haeckel. Thus, in regard to Lineu he affirmed that “he taught that each species was created independently of the other, thereby denying the great number species produced from the cross breeding of two distinct species or hybridism”.²⁹ Agassiz was recalled in the following form:

Luiz Agassiz, the celebrated author of *An Essay on Classification* and who in this very city added new laurels to his sage’s crown, as professor claimed that “the species was created in isolation, with no descendency from another”; in the work which most contributed to his immortality, in which he wrote page after page on the natural specimens he had gathered in deposits where they had laid resting for millions of years. In this book on fish fossils, he contradicts himself so much as to be of help to Darwin, who was his adversary, as you had occasion to note, celebrating the logic of his deductions.³⁰

To resolve this question that D. Julia herself had perceived as a contradiction in Agassiz, Rangel S. Paio resorted to Haeckel’s authority on the subject:

...the fish fossils described by Agassiz have an extraordinary value for the historical sequencing of vertebrates and their evolution as well as demonstrating the solidly established laws of general evolution and these laws were discovered by Agassiz. As such, he was the first to reinforce the notable parallelism between embryonic and paleontological evolution, between ontogenesis and phylogeny.³¹

For Rangel S. Paio, Darwinism held a scientific truth that made itself present even in his adversaries, since Lineu and Agassiz “when they spoke without preaching, when they spoke as men of science, negating religious prejudice, exchanged fraternal embraces with the old naturalist from the *Beagle*”.³² Another opponent of Darwin's, well known in Brazil, was Quatrefages,³³ whose theoretical perspective influenced the anthropological works of doctors Batista de Lacerda and Rodrigues Peixoto, of the National Museum:³⁴

Darwinism gave rise to insatiable adversaries many of whom, such as Mr. Quatrefages, based their struggle on etymological or lexicographical questions and accepted certain fundamental principles of the Shrewsbury naturalist, as long as they were able to substitute one word with another; they accepted the law of transmutability, insofar as instead of the latter

²⁹ RANGEL S. PAIO, 1877a, p. 136.

³⁰ RANGEL S. PAIO, 1877a, p. 136.

³¹ RANGEL S. PAIO, 1877a, p. 136.

³² Name of the ship Charles Darwin use on his exploratory trip to the Galapagos Islands in 1831 (RANGEL S. PAIO, 1877b, p. 136).

³³ O naturalista Jean Louis Armand de Quatrefages de Bréau (1810–1892), criador do primeiro museu de etnologia na França (1880), era um dos principais defensores da unidade da origem da espécie humana.

³⁴ Heloisa Maria DOMINGUES e Magali Romero SÁ, 2003, p. 104.

noun, variability is employed, insofar as they speak of variety or race instead of species.

As if this was not equivalent to the same fact, as if by force of indefinite variability, true organic transmutability, over a long series of years, were not produced!³⁵

Thus Rangel S. Paio concludes: “So you see that the adversaries of transformism, when they attempt to defeat it with their scientific weapons, are fatally destined to imitate that Peloponnesian philosopher who denied movement....and walked”.³⁶

In the intellectual arena of the late 19th Century, the biggest disseminators of Darwinism were the talented young people who sought new directions in politics and philosophy.³⁷ This generation fused Comte’s evolutionary scheme with elements of Darwin’s theory. Although not so young when he wrote these letters, we can include Rangel S. Paio in the legion who saw in Darwinism a positive scientific doctrine that would help humanity to overcome the metaphysical stage imposed by philosophy and religion: :

This is the doctrinal mission that Charles Darwin helped to popularize. Studying the organic kingdom in all its manifestations, calling chemistry and physics to his aide to interrogate the veracity of the heterogeny, and the genetic secret of the protozoans; resorting to geology, paleontology and comparative anatomy for the secret of the species’ mutability; to physiology for organic movements, to embryology for animal joints, the evolutionary laws of the embryo, and seeking and finding in all these sciences, confirmation of the truth of his starting point and his method that were to bestow on man the truth of his origin.³⁸

In spite of Darwinism's advantages for the natural sciences, in Rangel S. Paio’s view the greatest progress was that which the doctrine would promote on the moral plane. Once Darwinism challenged the order established by what at that time constituted knowledge of nature, it became possible to redirect society’s organization:

... the fall of prejudices, the conviction of their unhealthiness, since men, by recognizing themselves as animals of the same zoological genre albeit of varying species will not judge themselves more dignified than their congeners and will not belittle them. The promised fraternity of the sociological cogitation will establish itself and man, seeking to surpass them only through moral and the cultivation of spirit will realize on earth the kingdom of happiness and mutual respect.³⁹

³⁵ RANGEL S. PAIO, 1877a, p. 136.

³⁶ RANGEL S. PAIO, 1877b, p. 136.

³⁷ COLLICHIO, 1988, p. 57.

³⁸ RANGEL S. PAIO, 1877a, p. 168.

³⁹ RANGEL S. PAIO, 1877c, p. 168.

Darwinism would demystify social differences and work would become the only means to achieve fortune; “the ‘parasitism’ which comes in as many forms as human astuteness has been able to conceive will lose its reason for being”.⁴⁰ Perceiving a moral content in Darwinism, Rangel S. Paio viewed his opponents not only as opponents in a scientific debate but also as those interested in maintaining a system of social ‘parasites’. In this manner, he addresses D. Julia again:

It is not utopia, my lady, but the future of humanity as it must be, be already presaged by the parasites who in seeking in the instinct of self - preservation weapons and forces, spread calumny and subterfuge against science and against the men who bow only to science and who venerate only those who speak in the name of science.⁴¹

Thus, Rangel S. Paio advised D. Julia to study Darwinism, which would then lead her to study paleontology, physiology and all the sciences related to it; then “certainly you will break with a past without glory and aspire to a future full of light, where the ghosts of superstition will not be able to waver causing chills and gathering.... coins”.⁴²

In his last letter to D. Julia, Rangel S. Paio concluded that Darwinism was a complex science which required the assistance of other sciences, while also aiding them and in this regard lending a great service to human development. Reaffirming a theological vision of the evolution of the species, the author finishes by emphasizing the advantages of Darwin’s theories:

Showing man where he began, where he is and where he can go, he succeeded in eradicating many derisive prejudices, making man less proud of his exterior and the fortunes of cradle, more humane with his less perfect brothers – those whose embryonic period was shorter. And morals triumph, since man will better know how to fulfill his duties, with a greater understanding of his place in the universe!⁴³

Various meanings can be drawn from this piece of scientific dissemination directed at Brazilian women at the end of the 19th Century. D. Julia’s presence at public conferences can also be interpreted as evidence of the process of modernization and urbanization the Second Empire was undergoing. If during the colonial period a woman from a Brazilian patriarchal family presided by an all powerful father with control over his dependants and slaves was not allowed to leave the patrimonial home (the *casa grande*), women from the second half of the 19th Century were already making inroads. It is worth remembering that the streets of Rio de Janeiro in the 19th Century were unsanitary and there were no established laws regarding who occupied them. In the century that

⁴⁰ RANGEL S. PAIO, 1877c, p. 168.

⁴¹ RANGEL S. PAIO, 1877c, p. 168.

⁴² RANGEL S. PAIO, 1877a, p. 168.

⁴³ RANGEL S. PAIO, 1877a, p. 192.

followed, the implementation of public policies based on hygienic measures can be observed, making it easier for the ladies of the court to use the city streets.⁴⁴

It is also worth pointing out that this set of letters were not addressed to every woman, but rather a segment of society usually defined as elite. From this affirmation another fact is derived: at that time, elite women were taking on a different role in society. In this process of transformation, the significance of the role of the doctor should not be neglected.⁴⁵ The hygienists were particularly responsible for transforming the behavior of families, through the advent of new scientific parameters.

Between the years 1860 to 1870, the theoretical explanation for disease was obtained from learned physicists, chemists and biologists, producing a valorization of knowledge produced in laboratories rather than through observation of the bed-ridden patient. This affected society's notions of the body and illness. It contributed to the advent of the "bourgeois mother", or rather, the mother and wife aware of the recent advances of science, now transformed into an agent of this "hygienic revolution in the Brazilian family unit"⁴⁶. In addition to the hygienists, positivists - although not armed with microbial theories - were attentive to the function of women in society. Licínio Cardoso⁴⁷ expounding on the educational theses of Augusto Comte, defended the idea of the "educating mother". Thus, positivism also had a project for the reform of society based on gender criteria:

Augusto Comte's conception of instruction is profoundly sane: it is based on primary education in the home by the *mother* of the family and after in a free public system, implemented by *men* with suitable moral and intellectual qualifications.⁴⁸

Thus, at the end of the 19th Century, expectations for an "illustrated woman" came into being, responsible for the health and education of her children, and socially defining gender roles: the woman in the private space and the man in the public one, thus constructing an image of men as beings of greater intellectual competence and women as affectionate and fragile creatures. At this time, such qualities were evaluated positively. Around 1870, when reforms for the Brazilian

⁴⁴ Cf. Maria Ângela D'INCAO, 1997.

⁴⁵ Cf. Jurandir Freire COSTA, 1979.

⁴⁶ Norma TELLES, 1997, p. 429.

⁴⁷ Licínio Cardoso, (1852–1926), from the state of Rio Grande do Sul, one of the last positivists from the Escola Politécnica (Polytechnic School), was admitted as a student of Military School at the beginning of 1877, concluding his degree in Military Engineering in 1879. At the Military Academy he was won over to Augusto Comte's positivism of Benjamin Constant, his instructor. He became dedicated to the dissemination of Comteism in the Military Academy and the Polytechnical School.

⁴⁸ Licínio CARDOSO, 1897, p. 79.

education system were being discussed, a proposal was made, based on the German model, for the creation of kindergartens run by women, as they were ‘naturally’ more affectionate than men. This would guarantee the social participation of women as educators outside the home as well.

In addition to agreeing with the ideas of the ‘sciences’ that norms for social behavior would spring from knowledge of nature, according to Therezinha Collichio, Brazilian Darwinists believed that the exercise of the organs and ‘faculties’ would allow the adaptation and perfection of Brazilian society.⁴⁹

Women would play a fundamental part in this process and because of this, their instruction could not be neglected in any form. These men argued for the education of Brazilian women of the period with the objective of stimulating their intelligence so that, in the future, they might become elements of progress and civilization. For many Haecklians, such as Tito Lívio de Castro⁵⁰ the inferiority of women was explained by evolutionary theory itself:

The superiority of men is of phylogenic origin – the male of the species has undergone more transformations and adaptations than the female. Thus, stimulation of the intellectual function determined, in the masculine brain, a small development in cerebral volume which led to an increase in this function, progressively accelerating the differentiation. Women did not need the cerebral function as much and the organ and function were transmitted hereditarily so that after the millenniums the difference between the sexes became greater.⁵¹

In this regard, during the 19th Century Darwinism provided a new perspective on the asymmetry between the sexes. For the anthropologist Henrietta Moore, the social value of biological difference between men and women is universal, with their attributes varying locally. In her view, every culture makes distinctions between human society and the natural world, and women, by virtue of their reproductive activity, are associated with nature while men have been more associated with culture.⁵² This led to a determined interpretation of Darwinism which proclaimed that women, through their association with nature had evolved differently from men. Therefore, their ‘evolution’ should be considered with care. Although D. Julia is presented as a learned person familiar with the era’s world of scientific debate, he takes on the role of mentor to

⁴⁹ COLLICHIO, 1988, p. 39.

⁵⁰ Tito Lívio de Castro was born in 1864 and died, at 26, shortly after completing his doctorate at the Medical Faculty of Rio de Janeiro. Thanks to the efforts of his adoptive father, Manuel de Costa Pais, and Sílvio Romero, his professor in Pedro II College, the posthumous publication of *A mulher e a sociogenia e Questões e problemas* was made possible (COLLICHIO, 1988, p. 81).

⁵¹ CASTRO apud COLLICHIO, 1988, p. 81.

⁵² MOORE, 1988, p. 20

his friend, thus establishing a clearly hierarchical relationship. His recourse to “letters to a lady” also reinforces the idea of a private “woman’s place”.

Rangel S. Paio attributed to D. Julia a certain intellectual restlessness, turning her into an active reader. On one occasion in their ‘correspondence’, she even complains of a certain lack of clarity in her ‘instructor’: “You are quite right. The end of my 3rd letter is of the kind that even I question what it was I was trying to say!”⁵³

Upon addressing himself to a lady to disseminate Darwin’s ideas, Rangel S. Paio was constructing an imaginary public, supposedly more resistant to the novelty that was Darwinism at that time. He was probably close to Ladislau Netto in his thoughts on education and how it would aid in the evolution of the human species, eliminating from human beings their ‘bestiality’. Netto thus affirmed: “We seek, sir, by means of culture of intelligence and the greater development of sociological laws, to break the cages that enslave us still to the rest of creation”.⁵⁴ It may be that in order to promote the ‘development of sociological laws’, the ex-director of the National Museum included feminine participation in his public courses, considering that their presence, as Rangel S. Paio would say, was necessary for Brazil to triumph in the *struggle for life* between nations and thereby free itself from a past without glory.

The end of this story remains open, since it is not known whether D. Julia joined the ranks of the ‘friends of Charles Darwin’, or if she was less shocked by subsequent conferences she attended. For us, nonetheless, the “letters to a lady” series contributes towards a more precise idea of the processes of scientific dissemination in the 19th Century and of the female image that is projected within them.

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⁵³ RANGEL S. PAIO, 1878, p. 191.

⁵⁴ Apud GUALTIERI, 2003, p. 83.

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Received in June 2006 and accepted for publication in November 2006

Translated by Tony John O'Sullivan

Translation from **Revista Estudos Feministas**, Florianópolis, v.15, n.2, p. 383-398, May/Aug. 2007.