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José Augusto Pádua

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Centre for Brazilian Studies
University of Oxford
92 Woodstock Rd
Oxford OX2 7ND

Nature conservation and nation builiding in the thought of a Brazilian founding father: José Bonifácio (1763-1838)

*José Augusto Pádua**
Professor of History, Universidade Federal do Rio de Janeiro
and Ministry of Culture Visiting Fellow, Centre for Brazilian Studies
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Abstract

This paper reviews the foundations and development of environmentalism in the work of political theorist José Bonifácio, emphazing the intellectual origins of his work in natural science, the centrality of concerns about environmental destruction and management of nature throughout his career, and the originality of views he developed in response to observations about Brazil upon return from Portugal. Review of his works provides new perspectives on intellectual history, political theory, and environmental policy.

Resumo

Este trabalho discute as reflexões sobre natureza e desenvolvimento nos textos de José Bonifácio, enfocando as origens intelectuais de sua produção nas ciências naturais e a importância dada por José Bonifácio não somente aos processos de destruição ambiental, mas também à gestão ecológica. Em particular, ressalta-se a originalidade das observações traçadas por Bonifácio após sua volta ao Brasil, depois de sua estadia em Portugal. Uma leitura aprofundada destes aspectos na obra de José Bonifácio oferece novas perspectivas para a política ambiental e para a história do pensamento político brasileiro em geral.

"How, then, does man dare to destroy, in a single moment and without reasoning, the secular work of Nature, guided by the best judgment? Who allowed him to forsake so many and so important benefits? Ignorance, no doubt. (...) To destroy virgins forests, such as has happened until now in Brazil, is a horrendous crime and a grand insult to nature itself. What will be our arguments before the tribunal of Reason, when our grandchildren accuse us of such serious misdeeds?"

José Bonifácio de Andrada e Silva (1973 [1819]; 41-42)

"Nature has done everything to help us, but we have done nothing to help Nature. Our lands are abandoned and the few plots that we use are badly cultivated because they are tended by indolent and enslaved arms. Many of our mines, for lack of active and educated workers, are ignored or poorly exploited. Our precious forests are disappearing, victimized by fire and by the destructive ax of ignorance and selfishness. Our mountains and hillsides are daily balding, and in time there will be a shortage of the fertile rains that appease the vegetation and feed our watersheds and rivers, without which our beautiful land of Brazil will be reduced, in less than two centuries, to the condition of the empty plains and the arid deserts of Libya. The day (a terrible and fatal day) will then come when scorned nature will have completed its revenge against so many mistakes and crimes committed against it."

José Bonifácio de Andrada e Silva (1963 [1823]; 38)

Philosophical journeys

The writings of José Bonifácio are a source of astonishment for those who study them at first hand and go beyond the mist of myths and conflicting images that surround the so-called "patriarch of Brazilian independence." One of the surprises is the radicalism - both for its time and ours - of some of his proposals for social reform, especially when compared with his conservative positions in the matter of the organization of political power. Also remarkable is his emphasis on the relations between human societies and their territories, particularly the negative social consequences of the destruction of the natural environment.

This last position, despite being so clearly contemporary, has been practically ignored by the vast literature dedicated to Bonifácio´s intellectual and political work. Instead, his concern with the environment, and particularly forest destruction, have been interpreted by almost all analysts as a kind of idiosyncrasy, a marginal component of his political thought. In this paper I sustain quite the opposite. Bonifácio's concern for the environment is not a detail, but a basic and recurrent element of his thought since his early years. This perspective both allows us to see Bonifácio under a new lens and opens unexpected theoretical horizons.

This view requires that we consider the evolution of his thought and its close relation to his biography. Despite having been born in Brazil, the son of a wealthy family of merchants established on the coast of São Paulo, Bonifácio spent most of his life in

Europe. In 1783, at the age of 20, he went to Portugal to study at the Universidade de Coimbra, where he completed part of his university training. It is important to note that he attended Coimbra a few years after the curriculum reform of 1872 ordered by the progressive Prime-minister Marquis de Pombal. This reform pulled Portuguese academia out of traditional medieval scholasticism and toward the new concepts of natural philosophy and political economy then spreading in Europe. The Italian naturalist Domenico Vandelli (1735 - 1816), a friend and correspondent of Linnaeu, was commissioned to supervise Coimbra´s curriculum reform. Vandelli was central to the dissemination in Portugal of the economics of nature, physiocracy and other currents of thought in discussion elsewhere in Europe, and was an important founding member of the *Academia das Ciências de Lisboa* (Lisbon Academy of Sciences), in 1779.

Furthermore, Vandelli initiated criticism of the predatory use of natural resources in Portugal and its colonies (Vandelli, 1990 [1789]). This type of criticism, analyzed elsewhere (Pádua, 1999), strongly influenced a group of Brazilian intellectuals who studied in Portugal under the guidance of Vandelli. These intellectuals who returned to Brazil between 1780 and 1810 published a series of texts that systematically criticized environmental destruction, backward technology, and the low productivity of the colonial economy in Brazil. Therefore, Bonifácio should not be studied as an isolated thinker, but as the most brilliant member of this group of Brazilian disciples of Vandelli.[1] He stands out from others in the group in two ways. First, because of the longer time that he spent in Europe. Only in 1819, at the age of 56, did he return to Brazil, after a long period of maturation as a scholar and public administrator. Second, he had more numerous opportunities for intellectual enrichment. In 1790, Bonifácio began ten-years of study and work in the field of mineralogy commissioned by the Portuguese crown, visiting countries such as France, Italy, Germany, Sweden and Norway.

This experience should be understood in its historical context. The production of valuable minerals in Brazil, the major source of income for the Portuguese metropolis, had started to wane during the 1770s. As it became clear that output could not be increased by the prevailing rudimentary mining methods, knowledge about new mining techniques became a top priority. The hope was that new techniques could aid in the exploitation of new mines and the revitalization of older ones. With such hopes, three promising young intellectuals - two of them Brazilians - were sent by the Portuguese

[1] The relationship between Bonifácio and Vandelli evolved into a family matter when Bonifácio´s older daughter married a son of Vandelli.

crown on a “philosophical journey” - an elegant contemporary term - to collect knowledge that could prove useful to Portugal’s colonial empire. For Bonifácio, this experience deepened his initiation to the cultural universe of the sciences and enlightenment. While his primary focus was mineralogy, Bonifácio explored practically all fields of knowledge in the arts and natural and human sciences. This, in accord with the pedagogic principle of the enlightenment that multiple fields of study reinforce intelligence, because the sole energy of knowledge - reason - is cultivated in all fields (Cassirer, 1966; 41).

It was during this “philosophical journey” that Bonifácio started to develop more systematic concern with the destruction of natural resources. It is hard to pinpoint the exact origin. As a youth in Brazil, there had been no shortage of destructive phenomena to observe. In his *Memória sobre a Pesca da Baleia* [Memories of Whaling], written in 1790, he recalled “the memory of the disorders that I witnessed and observed in some of the whale fisheries in Brazil.” However, it is significant that this recollection began bother him only after he was “endowed with the study of the natural sciences” (Silva, 1963 [1790]; 31). It was in Europe that these memories started to have a deeper critical dimension. In this respect, Vandelli certainly provided a critical viewpoint on the destruction of nature and a positive view about the economic progress stemming from primary production, in accordance with the physiocratic doctrine.

Arriving in France in 1790, Bonifácio joined academic circles that were fertile grounds for such discussions. The “*Jardin du Roi*,” in Paris, for example, in which Bonifácio attended a chemistry course under Fourcroy, had become a center for diffusion throughout Europe of new concepts about the environmental impact of deforestation. Famous authors, such as Buffon and Duhamel du Monceau, had publicized the findings of the English naturalist Stephen Hales about the “desiccation theory” (Grove, 1995; 164). Bonifácio´s familiarity with this theory is clear in his later writings. The second epigraph to this paper, taken from an important text of 1823 discussed below, states directly that deforestation would reduce the “fertile rains” that “feed our watersheds and rivers.” In this manner, despite being a student at the Royal School of Mines, under the guidance of the geologist Guillot-Duhamel, Bonifácio made as many incursions as he could into the fields of agricultural and forestry. For example, he attended the courses given by the famous botanist Jussieu (on Jussieu´s place in the history of ecology, see Drouin, 1991; 35.). Bonifácio also studied new theories about

agriculture and silviculture, based on the work of Duhamel du Monceau.[2]

Richard Grove has shown how du Monceau influenced the adoption of an innovative set of public policies designed to contain environmental destruction in the Mauritius Island in 1767 (then a French colony). These policies were implemented by a group of intellectuals and administrators among whom the most important were Pierre Poivre, Philibert Commerson, and Bernardin de Saint-Pierre (Grove, 1995: ch. 5). Would Bonifácio have known about this experience on Mauritius Island? Unfortunately, because a great part of his personal papers and library of 6,000 volumes was lost, the tracing of the intellectual influences that shaped his thought is difficult.[3] We can be sure that he was aware of the writings of Pierre Poivre. In Bonifácio´s 1823 text about slavery, to be examined below, he cites the "sage Poivre" as the source of the information that: "in Indochina there are no slaves, and despite that fact, the production of sugar in 1750 nonetheless already amounted to 40,000 boxes, worth two thousand pounds each." Moreover, "all this sugar came from a small country, with no need to destroy forests and sterilize land, as is tragically occurring among us" (Silva, 1963 [1823]; 133). The author does not cite the passage in Poivre that provides this information, but it probably came from one of his travel narratives. In any case, there is no direct evidence that the experiment in the Mauritius Islands had any influence over the environmental thought of Bonifácio, although some of his manuscript notes refer to demographic and economic problems of the French colonies in the East, including the Mauritius Island (Silva, no date, 8).

Further philosophical travels in Europe provided him with additional connections. After France, he studied mineralogy with the famous Abraham Werner at Freiburg in Germany. Bonifácio´s stay in Freiburgh led to the beginning of a personal relationship with another thinker who had a strong hand in the later development of ecology, Alexander von Humboldt, then a student at Freiburg (Sousa, 1972; 27). Humboldt´s later influence over Bonifácio was considerable. He made extensive notes and transcriptions from Humboldt´s travel narratives in South America (Silva, no date, 2). It is important to add that Humboldt directly criticized the evils of environmental degradation in South

[2] Bonifácio discussed Duhamel du Monceau´s ideas about tree plantations in his 1815 book about the woodlots of Portugal, to be examined below. See Silva, 1963 [1815]: 229. The French scientist was very influential in the Iberian peninsula. In the case of Spain, he influenced especially in the areas of fisheries, agriculture and forestry (Urteaga, 1987). His work was also much discussed in the *Academia das Ciências de Lisboa*. Alexandre das Neves Portugal, for example, used his concepts in a text written to criticize the use of fire in Portuguese agriculture (Portugal, 1790).

[3] The surviving papers of Bonifácio are dispersed among several institutions. The richest collection is in the Instituto Histórico e Geográfico Brasileiro (Rio de Janeiro) and in the Museu Paulista (São Paulo).

America, making specific reference to the reduction of the water surface of the Valencia lake, in Venezuela, due to deforestation.[4] We know that Humboldt and Bonifácio exchanged letters for decades, based on the testimony of Emílio da Silva Maia, who saw a letter from Humboldt to Bonifácio at his home in Rio de Janeiro in the 1830s. In this letter, the German naturalist expressed his wish to travel to Brazil (Maia, 1838; 24). Another important - and unfortunately not well researched - connection in Germany was Bonifácio´s knowledge about the emerging science of forestry, in the context of a strong concern with the sustainable use of natural resources. For example, in his 1815 book about the woodlots of Portugal, Bonifácio cites the work of Count Burgsdorff, manager of the woodlots of Brandenburg, calling him "my wise professor and colleague" (Silva, 1963 [1815]; 166). Almost nothing is also known about Bonifácio´s experiences in Sweden and Denmark, where he lived from 1796 to 1800. It is more than probable that his intellectual interests led him to make direct contacts with disciples of Linnaeu.

This brief and incomplete review of Bonifácio´s experiences in Europe allows us to conclude that he witnessed the emergence of a new theoretical universe focusing on the dynamics of nature and the relationship of human beings with the natural environment - a movement that later led to the birth of ecology as a science. This universe deeply influenced his own scientific and political views. Bonifácio´s writings, however, developed a unique tone derived from the reflections and experiences of the author. This becomes particularly apparent when he returns to Brazil. His critique of environmental destruction turns into a theoretical instrument in the struggle for political emancipation and the national construction of a country of continental dimensions. However, Bonifácio´s texts, much earlier than this, were concerned with the issue of the proper use of natural resources.

Whales and woods

Bonifácio´s first published text already expressed his concern with the correct use of nature. It was published in 1790 by the *Academia das Ciências de Lisboa*, and was entitled *Memória sobre a Pesca da Baleia e a Extração do seu Azeite* [Memorial about Whaling and the Extraction of Whale Oil]. Three components of his future writings were already present: The theoretical framework of the economy of nature; economic progressivism and; the critique of the destructive use of natural resources. The call in

[4] On this discussion, see: Grove, 1995; 367. For a synthesis of Humboldt´s vision of the Americas, see Gerbi, 1982; 510-527. Humboldt´s importance in the constitution of the science of ecology is recognized by

favor of productive development is admittedly strong in this early text, one echoing the spirit of the *Academia das Ciências de Lisboa* in its first years. Although economic growth remained an important goal in his more mature writings, as we shall see, greater emphasis was given to the social and political aspects of nation building. Especially in his manuscript notes, we can even find a certain disenchantment with the goal of economic and commercial growth *per se,* that could lead to unhealthy results for the social body.

In the 1790 text, however, his major concern was with the large losses suffered by Portugal for not stimulating whaling along the lines of other European countries. Fishing and whaling were praised, in a physiocratic tone, as primary creators of wealth, having the additional advantage of not demanding large expenses for their improvement. Increase in production was not seen as something antagonistic to the conservation of whales. Bonifácio did not think that Brazil's natural resources were over-exploited. To the contrary, they were under-exploited and thus could generate more prosperity in the future. In the specific case of whaling, the low number of factories in Brazil could be increased if competition was allowed, indeed encouraged through the creation of premiums and fiscal incentives (Silva 1963 [1790]: 29).[5] However, the problem was not the quantity, but the quality of whaling. Despite under-exploitation, whaling in Brazil showed signs of unsustainability and evidence of the reduction of natural stocks of whales along stretches of Brazil's extensive coastline. This was the worst of two worlds: the number of whales taken was small, but the methods of production were so rudimentary that the resource was being decimated prematurely without yielding its full benefits.

Bonifácio´s text reveals the contrast between the arrogant rationalism of Brazilian intellectuals trained in Coimbra and the empirical predation practiced by colonial whalers. The managers of whaling factories are called "stupid" and "totally ignorant about the art of capturing whales." Moreover, adds the author, they "are disdainful of those who try to give them advice" and "stubbornly believe that their activities cannot improve only because they have run them in such a manner for many years" (Silva, 1963 [1790]; 30-31). The major limitation of these factory managers was the "lack of enlightenment" about the economy of nature. They ignored that the "wisdom of the Creator" configured whales in a manner appropriate to the fact that they were "meant to

almost all authors who study the matter. For a particularly positive view, see Acot, 1988.

[5] Whaling was regularly practiced in Brazil since 1615, in a monopolistic regime under which whalers signed

live in the ocean."[6] It was necessary to study the physiology and the behavior of these animals in order to learn what this configuration was. Ignorance led to "destructive" practices. The most blatant was the habit of "killing the young whales who still fed on maternal milk in order to harpoon the mothers with greater ease." At first sight, this method seemed efficient, because:

"they [the whales] have such a strong concern about their offspring that they almost always keep them between their fins in order to feed them. When the whalers come in for the kill, they do not leave, keeping their harpoon ready. The mother's concern is so strong that, even being able to remain under water for more than half an hour and thus escape the dangers, it decides to risk its life to try to save its offspring, that is not able to avoid breathing for so long. This motherly concern undoubtedly makes whaling easier.

The method of killing the offspring first in order to attract the mother seems excellent at first sight, although the animal sometimes overturns the whaling boats in its fury" (Silva, 1963 [1790];35).

In the medium and long-term, however, this method would lead to the "ruin of this important fishery." Bonifácio explains that "the whales, because of one of these wise laws of the general economy of Nature, give birth only once every two years to a single offspring that, if killed, leads to the demise of all its descendants." Harpooning the young whales would thus cause the "reduction of future generations." This practice would also alter the balance of the species, increasing the proportion of males in relation to females. Finally, killing offspring reduces stock growth and better exploitation. The consequence of these errors was the closing and abandonment of factories in Bahia and Rio de Janeiro, causing "great losses in the activities of fishing in Brazil" (Silva, 1963 [1790]; 35).

It is interesting to notice that Bonifácio, when discussing the relationship between the whale and its offspring, lets go of its objective tone and adopts an almost literary color, in which whales appear as subjects endowed with feelings and motivations similar to those of human beings. Associated with such narratives, ones that became more frequent during the 18th and 19th centuries, there emerged for the first time in modern western culture the issue of animal rights and notions about the intrinsic value of nature.

contracts of exclusivity with the Portuguese crown.

[6] This statement is typical of a follower of Linnaeu. The Sweden naturalist resorted to "divine providence" to explain the different locations and functions of animals in the economy of nature (Linné, 1972: 117).

In Bonifácio´s writings, however, this passage is not representative of his dominant perspective. Although he sometimes displayed a sympathetic sensitivity towards the natural world, particularly in his poetry,[7] we must recognize that his view of natural resources was essentially anthropocentric and utilitarian. Even considering the subjective image of whales in the passage under discussion, the rest of the text sustains that whales should be killed in larger numbers than those actually recorded, and that whaling should become more intense and thorough. True, this vanquishing view of nature was lessened by the strong belief in the principle of not destroying the natural bases of the economy. In contemporary terms, for Bonifácio the issue was not that of the intrinsic value of animals, but the sustainable use of their instrumental value.[8] Whaling was for him a perfectly viable activity that could be performed - in his own words - "very well and with profits, without destroying it for the future" (Silva, 1963 [1790]; 35). Better methods of exploitation were needed to leave behind ignorance and waste.

Such ignorance and waste were also to be found after killing whales. The extraction of their oil was also plagued with error and irrationality, generating indirect but very serious environmental consequences. The major flaw was in the excessive use of firewood - a theme that would become recurrent in Bonifácio´s writings. Brazilian furnaces and boilers were badly constructed. In the case of the whaling industry, this rendered oil dark and fetid. Besides, firewood was wasted despite exclusive extraction from "ancient forests or, as they say, virgin forests." This waste was the origin of "losses to the public caused by the burning of wood that should be used for building ships and similar ends." The fact that "there no longer were neighboring forests" made things worse, because it lead to a "great numbers of slaves in the factories" being used during most of the year "in the cutting and transportation of wood." All this could be avoided if there were better furnaces able to use smaller trees and wasted organic matter (Silva, 1963 [1790]; 43-44).

This concern with the waste of trees and forests would appear again, in a much deeper and consistent manner, in a later book entitled *Memória sobre a Necessidade e a Utilidade do Plantio de Novos Bosques em Portugal* [Memorial about the Necessity and Utility of Planting New Woods in Portugal], published in 1815, also by the *Academia das Ciências de Lisboa*. The second part of this text is of minor concern for the purposes

[7] Bonifácio´s poetry has a marked neo-classic and Arcadian style. However, some analysts consider that it contains elements that make it a forerunner of Brazilian romanticism. On this point, see Montello, 1963.
[8] "And given that they kill the young whales, why do they not take advantage of them, as they yield excellent oil?" (Silva, 1963 [1790]; 39).

of this paper, as it pulls together practical information about methods to be adopted to reforest the sandy stretches of the Portuguese coast. This section resulted from Bonifácio´s experience as Superintendent of Reforestation Works of the Beaches of the Ocean Coast, one of many posts held by Bonifácio in Portugal. The first section, however, is filled with highly instigating reflections that today we might well classify under the heading of a "political ecology" of forests. The issue of forests was presented in broad historical perspective. The fate of entire nations was, according to the author, closely tied to the fate of their forests:

"All those who have studied the great influence of woods and forests in the general economy of nature know that the countries who have lost their forests have become almost entirely sterile and depopulated. This has happened to Syria, Phoenicia, Cyprus and other lands, and is happening in our Portugal" (Silva, 1963 [1815]; 172).

It is significant that Bonifácio cites the Middle East. The desertification of the Middle East and North Africa was understood by Bonifácio as a consequence of human intervention and portrayed as a symbol of the gloomy future of nations that mistreated their natural environments. In another passage of the same text, he mentions the growth of sand formations along the coast of Portugal, caused mainly by the destruction of vegetation. He calls them "Libyan deserts," an analogy to the growth of the desert in Libya due to predatory practices. Years later, in 1823, when he criticized environmental destruction in Brazil (the second epigraph to this paper), he predicted that even this rich tropical land could be converted, in less than two centuries, "to the condition of the empty plains and the arid deserts of Libya." The major point for Bonifácio was not the citation of distant historical examples, but the possibility of their recurrence wherever the land was treated in a predatory manner.

In 1815, four years before returning to Brazil, Bonifácio´s concerns were still focused on the European context. The importance of forests for the original peoples of Europe, according to him, was more than merely economic, expanding into the area of cultural identity:

"In the infancy of our European lands, the woods received errant men and provided them with sustenance. They provided weapons for defense, long before copper and iron. Thick trees and dark cliffs were their first temples, and their first religion was the cult of the fauns and spirits of the forest."

Historical developments, however, were seriously threatening the continuity of this bond between the Europeans and their original habitat:

"Thanks to Divine will, the forests were then immense. However, as the centuries passed, these rich treasures that the liberal hand of Nature had served us with began to shrink or disappear because of the increase in population and agriculture, and also because of the indolence, selfishness, and unabated luxury of fictional needs, that destroyed in one day the work of many centuries. The time has come for us to wake up from such a deep torpor and to think seriously about the evils that Portugal is suffering on account of the lack of forests and woodlots" (Silva, 1963 [1815]; 174).

It is important to highlight the image of "fictional needs," because in this text - written 25 years after the text on whaling - we can see a certain critique of economic growth. Bonifácio distinguishes "the increase of the population and agriculture" from "the indolence, selfishness and unabated luxury of fictional needs." The former, despite destroying forests, was always to be considered by the author as an authentic factor of civilization. However, the latter represented a disappointing aspect of modern life, a mode of behavior that insulted Bonifácio´s stoic and down-to-earth sensitivity. For Bonifácio, these were central elements of destructive pressure on forests and the natural world in general. Reflections such as these represent a critical distance from modernity in Bonifácio´s thought, although something that he never fully developed. The criticism of "fictional needs" is highly explicit, but it is not clear if he thought them to be the inevitable consequence of economic progress, of "the increase in population and agriculture," or a departure from or disfiguring of such increases. It is likely that Bonifácio thought in the second way. His political ideas rested on the belief that it was possible to build a progressive, rational, enlightened and sober civilization. In his mature writings, though, we see frequent signs that he did not believe that Europe could live up to this ideal.[9] As

[9] In a letter from 1813, Bonifácio defined himself as a "*paulista* [native of São Paulo] prone to the meditation of the ancient and tired of the horrors of modern Europe" (Silva, 1998 [1813]; 168).

we shall soon see, this perception had an important bearing in his later reflections about the future of Brazil.

Whatever the motivation or development path, no community should base progress on the destructive use of forests, because their destruction puts a limit on the future of social life. Interestingly, Bonifácio divides the evils of forest destruction in two types: cosmic and political. Cosmic evils are those related to the degradation of the natural space in which the political community is located. This is expressed by the good state of the soil and the humidity of the climate. A soil without forests "becomes arid and naked," and scarcity of forests threatens "the dependable watersheds of rivers and springs." Besides, deforestation leads to storms and floods, the emergence of malignant fevers, prevents the purity of the air, and impedes the reproduction of game (Silva, 1963 [1815]; 176). Cosmic evils are thus not restricted to a natural dimension that is secluded from socio-economic dimensions. In Bonifácio's thought, cosmic factors merge with social life in the same chain of causality. He expressed this with great clarity in the following passage:

"If irrigation and navigation channels give life to commerce and agriculture, they cannot exist without rivers, and there can be no rivers without springs, and there can be no springs without rain and dew, and there can be no humidity without woods. (...) Furthermore, without enough humidity there are no meadows, and the lack of meadows leads to the lack of cattle, and without cattle no agriculture can exist. In this manner, everything is connected in the immense chain of the Universe, and the barbarians who cut their links sin against God and against Humanity, and are the perpetrators of their own evils" (Silva, 1963 [1815]; 176.)

In addition to these cosmic and socio-economic losses caused by deforestation, Bonifácio also emphasized specific political losses. For example, the topic of forests is raised by the author in criticism of the course taken by the French Revolution.[10] When discussing the utility of European forests to local populations, one of the more curious things he mentions is their importance as a political hideout. In forests, innocent peoples "found safety to escape from the Bonapartes of those times" (Silva, 1963 [1815]; 174). In addition to its aggressive and vanquishing character, the "horrible revolution" was

[10] Bonifácio lived in Paris in 1790 and 1791, and was a first-hand witness of the outcome of the revolution. Initially a sympathizer, he was alienated by disorder and violence. His critical view of the French Revolution goes a long way to explain his conservative political positions, contrary to anything resembling republicanism and anarchy. Bonifácio was aligned with the perspectives of Montesquieu, Diderot and others who favored a

blamed for the fact that France "had devastated its beautiful woods," because it revoked legislation issued by Coulbert that, in earlier times, had made France a model in terms of forest management (Silva, 1963 [1815]; 178).[11]

Bonifácio discussed the political consequences of deforestation in an approach that went far beyond the circumstances of France. He sustained that native or planted forests brought grand amounts of income to the state, sustaining military power and supplying weapon depots and shipyards in a dependable manner. The national economy was also seen as dependent on forests in many aspects. A solid forest base assured greater autonomy in international commerce, because "the nation with the capital of its own [forests] will not pay tribute to foreigners." A country that did not care for its forests was thus seriously threatened in political, military, and economic terms. The progress of society was directly related to forest conservation, because "without sufficient forests, located on proper and adequate terrain, governments will seek in vain to stimulate the operation of mines, the industry of factories, the navy, interior navigation, agriculture and all the pursuits of the social and cultivated man" (Silva, 1963 [1815]; 177-178).

Despite their cosmic and political importance, Portuguese forests continued to be ravaged. To reverse this, Bonifácio thought that government should act vigorously. Existing laws were not enforced because of the "leniency and ignorance of the authorities." There was a need for new, centralized, and coherent policies. His proposal was to reorganize all existing government activities related to forests, roads, rivers, and mines within a single agency. This agency should act in an integrated form, through a "single and connected system of means and ends." He thought that such a system would be able to surpass the inefficiency of public offices that worked "disconnected, and sometimes resembling mutual enemies, each one working at will and following whims or individual interests." What was needed was a "unified, earnest administration," composed of "learned and spirited men." Such an agency should set up a rigid process of inspection able to "safeguard and keep forests, punishing immediately and irreversibly those who plunder and burn them, or who set harmful cattle free in them at the wrong time and place." This called also for "new regulations, both general and specific, adjusted to the circumstances of the state and particular location of each district, in a manner that takes advantage of old ideas that are good and corrects bad ideas with better ones, based on scientific principles and on the experiences of the century." (Silva,

constitutional and reformist monarchy.

[11] On the increasing deforestation in France after the revolution, see Corvol, 1989 and Grove, 1995: 259.

1963 [1815]; 180-184).[12]

These were the ideas that dominated Bonifácio´s view about natural resources in the years immediately preceding his return to Brazil. These ideas were well-defined and elaborate in terms of the social and political importance of natural resources, about the major causes of their destruction, and about the need to organize public policies to guarantee their conservation. Bonifácio´s ideas combined the government interventionism characteristic of the Marquis de Pombal with brand new scientific arguments, based above all on the economy of nature. Indeed, Bonifácio's projects brought together the theoretical rationality of science and the practical rationality of public action. This was the ideological baggage that he brought from Europe when he landed on Brazilian shores in 1819.

"To go deep into the forests of São Paulo"

While Bonifácio lived in Europe, the fate of Brazil was both a constant and a distant topic for him. The truth is that he knew little about the country in which he was born. The 20 years he had lived in Brazil were spent almost entirely in the village of Santos on the coast of São Paulo, or in religious schools, both well within the restricted circles of the tiny colonial elite. While his intellectual blossoming occurred in Europe, Brazil did not lose its importance in his thoughts. During his stay in Europe, his concern with Brazil and the possibility of returning to Brazil inspired him to engage in countless reading and conversations about his homeland. One instance in this respect are his manuscript notes sent to his friends Rodrigo e Domingos de Sousa Coutinho, Portuguese officials who shared his view about the need to make Brazil's economy more progressive, for the sake of the Portuguese empire. Written around 1812, these notes contain a list of ideas and projects for Brazil, several related to matters involving natural resources. These notes include recommendation to: "plant woodlots in the desert scrubs of Pernambuco, Ceará, Maranhão, and Rio Grande do Sul along rivers and streams, … create an agency to manage mines, waters and woodlots, one also responsible also for training to prepare able employees, … introduce camels from Bissau in the hinterlands of the Northeast and Peruvian vicuñas in the Southern mountains, … create experimental farms in the provinces in order to introduce European agriculture and new

[12] Bonifácio paid attention to the environmental policies that were starting to emerge in other European countries, mentioning the French tradition of the "Great Master of Waters and Forests," and similar and more recent experiences in Germany and Prussia. These examples were based on centralized and integrated management, much in the manner he was suggesting for Portugal.

crops, … create economic societies throughout Brazil, to promote the industry of the people, … introduce steam boats in interior navigation, … stimulate the immigration of the poor from Portugal and of productive foreigners, giving land to them, … establish a deposit for models of machines and implements, … rage a constant war against the ants, … send for Chinese from Macau [a Portuguese colony in China] who know how to cultivate and prepare tea, … create two good schools of metallurgy," and so on.[13]

A year later, in a letter to Domingos de Sousa Coutinho, who was about to become minister in national government, we can also see that Bonifácio emphasized the need for broader reforms. Discussing the possibility of Brazil becoming an empire as powerful as China, a theme to which he would return later, Bonifácio states that this would never happen without the abolition of slavery, a "cancer" that had to be cured with "time and care." Bonifácio also proposed the incorporation of indigenous peoples into Brazilian society, in order to improve their situation. Brazilian society, in general, had to overcome its great heterogeneity, mixing together "whites, mulattos, free and enslaved blacks, Indians" into a "solid and political body." He even suggested that he would be willing to govern a relatively peripheral region of Brazil - corresponding to the current state of Santa Catarina - in which, if he had liberty to act, he would "plant the arts and agriculture of Europe," "place forests under regular management," "create fisheries and fish industries," and "try out my project of civilizing Indians through Christianity" (Silva, 1998 [1813]; 170-172).

These proposals, despite being intelligent and lucid, were formulated for a distant Brazil, a Brazil he picked up in books, the country available to Europeans scholars who avidly read through reports and information generated by naturalists and travelers who visited it. Bonifácio had the advantage of the memories of his youth. Significantly, his recollections rarely referred to situations or characters of the backward colonial society. What he recalled most was the nature of Brazil, its tropical flora and fauna. In a letter written to a friend, in 1818, during one of his periods of disillusionment with Europe, Bonifácio stated that "all I wish is to go deep into the forests of São Paulo, where at least I have plenty of bananas, pork meat, and manioc flour" (cited in Sousa, 1972; 62).

Despite such outbursts, historians remain unsure about exactly what brought Bonifácio back to Brazil, 36 years after his departure. There are conflicting signs about his motivations. From his farewell speech, delivered at the *Academia das Ciências de*

[13] The entire set of these manuscript notes, filed at the Instituto Histórico e Geográfico Brasileiro (Rio de Janeiro), is reproduced in Vianna, 1963.

Lisboa, of which he had been secretary since 1812, we can deduce that he was returning to Brazil with the fervent purpose of building a new political utopia. In this elegant speech, of June 1819, he recalled his academic and political trajectory since first arriving in Europe - including the times during which he put to work his "traveling observer's soul," "reaching ecstasy with each step across the universe." In the end, he states that he is returning to Brazil for reasons of gratitude, vassalage, honor, health and reason. He calls Brazil "a new Portugal," stating that "the founding of the Brazilian monarchy" would be an event that "will open a new era in the future history of the universe."

It is ironical to notice that Brazil's "patriarch of independence," as late as 1819, certainly was not considering the possibility of a politically independent Brazil. Since 1815, Brazil had ceased to be a colony, having been elevated to the status of a "united kingdom" linked to Portugal. Portugal's king, as a matter of fact, was living in the ex-colony since 1808, after fleeing napoleon's troops that invaded Portugal. The dominant project among the Brazilian intellectual and political elite at that moment was to proceed with this experiment, promoting autonomous development in association with the Portuguese crown. Bonifácio´s speech highlighted the enormous potential of this option, considering the natural richness and the privileged geopolitical position of the country. His words were galvanizing: "what a country it is, gentlemen, for a new civilization and for a new capital of the sciences! What a land for a vast and strong empire!" There was no doubt that he referred to the territory "bathed by the waves of the Atlantic ocean," "with such a large number of powerful rivers," "very rich in the three kingdoms of nature" and located "almost in the middle of the globe, in front and at the door of Africa, that it must control, with Asia to its right and Europe to its left - what region can rival it?" (Silva, 1963 {1819]; 472). As distinct from its natural resources, the potential of Brazilian society was all but forgotten in the speech.[14] This slave-holding, poorly educated society did not inspire grand hopes in Bonifácio, who would defend, ever more intensively, its radical reform.

It is easy to infer, from this speech, that Bonifácio wished to become a leader in the construction of a political utopia. However, there were signs pointing in an opposite direction. The decades spent in Portugal had caused Bonifácio to engage in hard work

[14] The only reference to Brazilian society in this speech was that it had a well organized clergy, that did not posses "useless riches." He hoped that this clergy would aid in the practical education of farmers. Another advantage, in an ironical tone, was that Brazil had "a few people of the ruling classes who often separate their private interests from those of the nation and the state" (Silva, 1963 [1819]; 472-473).

and to suffer considerable frustrations. The Portuguese State had entrusted him with a large number of academic and administrative tasks, but his performance had been hindered by bureaucratic conflicts, petty influence of nobles, administrative neglect, and cultural backwardness. Many Portuguese saw him almost as a heretic, as he refused to indulge in small acts of devotion. He was not satisfied with most of his personal relations either: “the greater number of men I know could well live on the Moon, as far as I am concerned; they mean nothing to my heart; they belong to another moral species” (letter cited in Sousa, 1972; 52). Also, we must recall that he had participated actively in the war against French invasion, having witnessed any number of violent episodes. Therefore, his return to Brazil could also be seen as a serene end to a career. In personal letters he wrote about his old age and fatigue, stating that he wished to return to Santos and “live and die as a simple man of the country” (personal letter cited in Sousa, 1972; 69). His historical fate was precisely the opposite. Not only did he become deeply involved in Brazilian politics, but just three years later he was directing the political and military actions that led to the irreversible political independence of Brazil.

In any case, Bonifácio´s initial choice upon return to Brazil was to move back to his native village of Santos and renew his knowledge of Brazilian reality. Just a few months after arriving he traveled deep into the interior of São Paulo in the company of his brother Martin Francisco, who held the post of local mine and forest superintendent. This trip, the main purpose of which was to search for minerals, was Bonifácio´s return to the reality of Brazil. It intensified his concern with environmental destruction in the country. As might be expected, meeting again the nature of the country did not cause frustration. Bonifácio was tireless in acclaiming the natural beauties and riches of his province, with its beautiful valleys, its “pleasant variety of trees, fields, orchards, through which run rivers with crystal-clear waters,” and its forests in which “game, specially deer, *pacas*, armadillos, tapir, crax and pigeons abound.” Even the mineral deposits, despite being exploited in small scale and with poor techniques, caused him to be enthusiastic with their potential. Bonifácio was vocal also about the beauty of *paulista* women, with “their good figure and spare stature, their colors of jasmine and roses” (Silva, 1963 [1820]; 505, 512 e 530). This was the Brazil he had longed for during so many decades. However, upon this background of luscious nature the social and economic reality shocked him because of its underdevelopment, violence and environmental degradation. In the first days of this trip he regretted:

"… the poor state of the Tietê and Tamanduataí rivers, void of banks or fixed beds, bled everywhere by barriers that form lakes and swamps, flooding these beautiful plains. The most regrettable is that these evils are not the work of Nature, but the result of the ignorance of those who wished to improve the course of these rivers" (Silva, 1963 [1820]; 507).

Notice that he was not criticizing artificial intervention in rivers. Neither did he state that rivers should be left in their natural state forever. He criticizes a poorly planned and destructive intervention. He even indicates the correct manner in which the Tamanduataí should be channeled, and would later suggest works that could improve the course of the Grande river.

Bonifácio was also distressed by the state of agriculture. Most of that “very good land” was not cultivated, “on account of both the lack of spirit among the inhabitants and the shortage of workers.” Where there was some agricultural activity, Bonifácio found it to be predatory, causing some areas to live on the brink of political risk. For example, not too far from the village of Itú, Bonifácio notices that

"All native forests were savagely destroyed by fire and ax, and this put an end to many sugar mills. If the government does not act strongly against this rage of destruction, without which nobody knows how to farm, soon all forests and all wood will come to an end, the sugar mills will be abandoned, farms will be sterilized, the population will migrate to other places, civilization will be reversed and the investigations of justice and the punishment of crimes will become ever more difficult in the heart of such deserts" (Silva, 1963 [1820]: 523).

This passage shows how Bonifácio´s appreciation of the environmental was essentially political. The destruction of the natural environment was seen as something that could generate wider political effects, including the collective disruption of the community itself. It could dismantle productive activity and civic life that, by definition, require a certain demographic stability. In this sense, Bonifácio´s statement that the expansion of deserts would make “the investigations of justice and the punishment of crimes” more difficult is of special relevance. Unfortunately, he did not develop the logic of the causality that he had in mind, but the statement is enough to show how strongly Bonifácio connected social disarray with environmental destruction

Other comments about Brazilian society keep coming up, strictly linked to his environmental observations. Bonifácio was shocked with the treatment given to slaves and Indians. When he learned that an expedition was being organized to round up Indians (identified as *Kayapó*) on the banks of the Paraná river, Bonifácio writes that the "fate of these Indians ... deserves our fullest attention, so that we do not add to the shameful and inhumane traffic of the sons of Africa the even more horrendous traffic of the unfortunate Indians from whom we took the land, and who are free, not only according to reason, bus also according to the law" (Silva, 1963 [1820]; 525).

Everything he saw renewed and intensified his concern with and anxieties about the future of Brazil. Some of the grand problems that would become standards in his later political exhortations - particularly when he became a statesman - can be clearly identified in the observations written during this 1820 trip: the destruction of natural resources, the underdevelopment of the economy, the war against the Indians, the evils of slavery. Other evils were also worthy of his comments, such as the corruption of local politicians, and the ignorance and superstition that control the minds of the rural population (including the clergy). However, his picture was not entirely gloomy, as Bonifácio was pleased to encounter a few regions of São Paulo in which there were examples of endogenous development. Some places had sound subsistence agriculture, run by "active and wholesome" people. A few villages, such as Piracicaba, were modern and well cared where "Cattle herds allow for great hopes" (Silva, 1963 [1820]; 516, 530). These examples approximated what his imagined ideals for the country. In these small pockets of rural prosperity, Bonifácio could foresee a country that would be economically progressive, environmentally balanced, and free of slavery.

The return to Brazil certainly brought back to Bonifácio´s mind his earlier perception that the country urgently needed to engage in projects for systematic reform and development. The pace of political developments soon gave new meaning and urgency to this need. Following the so-called "Porto Revolution" in Portugal, in 1820, a period of intense debate and political mobilization emerged in the "united kingdoms" of Portugal and Brazil. The first major proposal to come out of this juncture was to recast the empire inside a new constitutional frame, configured by liberal principles of political organization. Throughout 1821, provisional authorities of semi-revolutionary nature were formed in several Brazilian provinces. These new local authorities dedicated themselves, among other things, to selecting Brazilian representatives for the constitutional assembly to be held in Portugal. The details of this process are not relevant here, but the fact is

that Bonifácio quickly became involved in the sphere of national politics. In early 1821, he became a member and then major leader of the provincial government of São Paulo. In early 1822, when it was already clear that the constitutional assembly in Lisbon was planning to reduce the autonomy Brazil had attained - and perhaps even downgrade it once again to the status of colony -, Bonifácio was invited by the regent prince (the future Emperor Pedro I) to be Minister of the Kingdom and Foreign Affairs and head the cabinet that eventually led the country to political emancipation in September 1822. The idea of maintaining the status of a "united kingdom," favored by Bonifácio in 1821, was no longer viable. Several intellectuals and leaders evolved from this position to the proposal of a complete breakaway and independence from Portugal. These were the circumstances under which the thoughts of José Bonifácio, including the environmental ones, started to explore new horizons.

The environment of freedom

There is no doubt that the new challenges posed by the political circumstances and the political tasks undertaken by Bonifácio stimulated his effort to pull together a project for Brazil. His growing leadership in national politics, particularly at the juncture of independence from Portugal, provided a unique opportunity to pass from theory to practice in the business of reform and nation building. It was urgent to organize and refine proposals for change. Bonifácio did this in four texts: *Lembranças e Apontamentos do Governo Provisório para os Senhores Deputados da Província de São Paulo* [Notes and Reminders of the Provisional Government to the Distinguished Representatives of the Province of São Paulo] (1821); *Necessidade de uma Academia de Agricultura no Brasil* [The Need for an Academy of Agriculture in Brazil] (probably from 1821); *Apontamentos para a Civilização dos Índios Bravos do Império do Brasil* [Notes concerning the Civilization of the Wild Indians of the Empire of Brazil] (1823); and *Representação à Assembléia Geral Constituinte e Legislativa do Império do Brasil sobre a Escravatura* [Message to the General Constitutional and Legislative Assembly of the Empire of Brazil about Slavery] (1823).

In these works Bonifácio tried to rework his intuitive insights and earlier proposals into a broad and coherent national project. This project, that can be discussed only in general terms here, had two basic guidelines. First, Brazilian society could not continue to be so radically heterogeneous and fragmented. It was necessary to transform the population into a society that integrated all sections and was endowed with a sense of

national unity. This required gradual policies for emancipation and incorporation of African slaves, assimilation of indigenous peoples, support to foreign migration, and programs of popular education. Second, there was a need for a general policy to protect Brazil's natural resources, because they were the basis of the country's progress in the future. This policy meant abandoning the agricultural model typical of the colonial system, based on large land holdings, monoculture, and forest destruction. This model should be changed through land reform and the diffusion of modern and environmentally sound agronomic methods.

The first directive had appeared in Bonifácio´s earlier writings, but now it was written out in all its radicalism. It was necessary for Brazilians to fight against the intentions of the "ancient despots" who wanted them to be "a mixed and heterogeneous people, without a nationality or a brotherhood, so that we could best be enslaved." In an image typical of a person schooled in metallurgy, Bonifácio writes that it was necessary "to blend so many different metals to produce a homogeneous and compact whole, a matter that will not crumble at the slight touch of any new political convulsion (Silva, 1973 [1825]; 90-91). This went way beyond the simple proposal of improving the living conditions of African slaves, in order to diminish their potential for insurgency. What Bonifácio called for now was a policy of transforming Blacks "from immoral and brute men into active and virtuous citizens" (Silva, 1973 [1821a]; 19), so that society can accept them as "our brothers and compatriots" (Silva, 1973 [1825]; 97). Bonifácio may have been the first Brazilian thinker to praise racial miscegenation, when he wrote that it was necessary to "favor by all possible means marriages between Indians, whites and mulattos, who must then settle in villages," or that "the mulattos are the best race in Brazil for factory work that demands activity and intelligence" (Silva, 1981 [1820]; 208).

It is easy to imagine how unpleasant this sounded to the ears of the Brazilian social elite. The author made these statements confidently, based on two theoretical bases. Having studied history and ethnography, he knew that the concept of "pure race" was an illusion. Portuguese colonizers themselves were defined by him, in a manuscript note, as "mestizos of alanians and other Tartarian hordes, mixed with suevians and visigods, moors, negroes and jews, and with romans and iberians." Brazil, on the other hand, was following the same path, having a people formed by "a mix of Indians from several tribes, negroes from several regions, Europeans and Turks" (Silva, no date, 3).

The second directive, typical of an enlightenment thinker, was that all men were born equal and endowed with the same ability to reason; their differences resulted from

socio-cultural and ecological circumstances. Bonifácio adhered to this principle when he stated that “if Newton had been born among the *Guarani* [a linguistic group of Native peoples inhabiting the southern part of Brazil] he would have been only one more biped to have lived on the earth, but a *Guarani* that was raised by Newton might substitute him” (Silva, 1973 [1823]; 75).

Thus, Bonifácio thought that both African and Natives were perfectly capable of being assimilated into Brazilian society. For a philosopher, racial and biological prejudices were not admissible. This does not mean, however, that Bonifácio was a proponent of cultural relativism. The criteria of truth lay with Newton, not the *Guarani*. The dignity of Africans and Natives was not culturally intrinsic, but was based on their potential to quickly learn the norms of civilization. Bonifácio considered the culture and ways of life among Natives despicable. Their incorporation into national society depended on their conversion to civilizing concepts such as property, work, religion, marriage, and government. Despite this, and because of this, it was imperative to put an end to the wars and violence committed against them, recognizing that the treatment that had been given to them was the worse possible, including the “continual theft of their best lands.” An alternative strategy would imply an effort to understand their ways of life and, on the basis of such understanding, devise ways to attract them to the civilized world. (Silva, 1973 [1823]; 73).

Bonifácio pursued elaborate reflections about indigenous societies in the attempt to develop the bases for such a strategy. These reflections included the dimension of the environment. In a form analogous to that of contemporary anthropologists such as Sahlins (1972; chapter 1), who emphasize the abundance of natural resources in the face of limited material needs in order to understand the life styles of nomadic peoples, Bonifácio wrote:

"man, in his wild state, and specially the wild Indian of Brazil, must be lazy, because he has few or no wants; as a wanderer, he can move successively into lands filled with game and fish, or wild and free fruit. Because he lives exposed to the elements, he needs neither house nor comfortable clothes, nor does he need the delicate objects of our luxury. Finally, he has no notion of property, nor does he crave social distinction and vanity, which are the powerful forces that prompt civilized man into activity" (Silva, 1973 [1823]; 74).

This social condition explains why Natives' “social activities never gained sufficient extension and intensity that would lead them to create regular governments, able to punish the mutual injuries inflicted to and by participants” (Silva, 1973 [1823]; 74). The policy of stimulating the Indians to live in villages, from this perspective, should account for environmental factors. They should not receive land with very fertile soil, so that “the new colonists will not deliver themselves solely into the hands of nature, but, much to the contrary, will be forced to make a living and support themselves with their own rustic work ” (Silva, 1973 [1823]; 79).

Incorporation of Natives into Brazilian society would have the advantage of reducing the need for African slaves, but it was meant to be only part of broader environmental and political reforms of Brazil. The very abundance of nature in Brazil could inhibit civilizing efforts, as demonstrated by the Natives and by the parasitic nature of the economic activities of Portuguese colonizers. However, thought Bonifácio, if such abundance could be used in a productive and intelligent way, it could work in the opposite direction and become an instrument to stimulate progress. For this to happen, economic activities that made poor use of natural resources - either under-utilizing or devastating them - should be eliminated. Therefore, both the traditional mode of life of the Indians and grand mono-crop plantations had to be abolished.

Plantations based on slave work, in fact, were the biggest source of evils, because they were incapable of promoting any real economic progress and managed to mine and destroy the two fundamental bases of progress - the spirit of industry and the richness of natural resources. Slavery destroyed both the health and the dignity of the slaves, but also undermined the inclination to work and morale of the free. On account of slavery, land owners lived in luxury, corruption, laziness and vice. More seriously, slavery ravaged the natural bases of all prosperity. Bonifácio was the first Brazilian thinker to establish a causal effect between slavery and environmental destruction:

"If the landlords did not have at their disposal an excessive multitude of slaves, they themselves would use lands already opened and cleared of forests, that today lay abandoned as derelict lands. Our precious forests full of wood proper for construction and shipyards would not be destroyed by the murderous ax of the Negro and by the devastating flames of ignorance. The upper reaches of our mountain ranges, perennial sources of humidity and fertility transferred to the lowlands, and of electric circulation, would not be bare and toasted dry by the heat waves of our climate. It is obvious, therefore, that if agriculture is practiced by the free arms of small proprietors, or by journeymen, these neglected lands will be used, because of need or interest, specially in the vicinity of the larger population centers, where one can always find a safe market, ready and rewarding, and in this manner the ancient virgin forests that characterize our beautiful country with their vastness and luxuriance will be conserved as a sacred heritage for our posterity (Silva, 1973 [1825]; 95).

This "excessive multitude of slaves" was the cornerstone of predatory agriculture and environmental destruction. Such destruction was not accidental, but the logical result of a particular system of production. The "free arms" of small proprietors and journeymen would reverse this, dealing with the land in a judicious manner, preserving the natural environment as a "sacred heritage."

We can now examine the second principle of Bonifácio´s national project - the protection of natural resources. We have seen that in his earlier texts Brazil's natural richness and geographical location were crucial to the prediction of the country's future greatness. This topic appears in 1819, in his farewell speech at the Lisbon academy. In 1823, trying to convince members of the constitutional assembly about the need to abolish slavery gradually, he returns to the topic in a more intense manner:

"The vast lands of Brazil, located in the most amenable and temperate climate of the Universe, endowed with the richest natural fertility, prosperous on account of its own numerous productions, and capable of developing a thousand other productions that be acclimated in it, free of the icings of Europe and of the heat waves of Africa and India, can and must be civilized and cultivated without the unnecessary toils of an unsettled and tiresome life, and without the arduous efforts of the arts and commerce exclusive of ancient Europe" (Silva, 1973[1825]; 103).

These words carried a subtle message. Brazil had a backward society. It was a mistake to think that such a society could build, in a short period of time, a productive capacity similar to that of the older European continent, with its "arduous efforts." Environmental conditions, however, could allow this difficult and slow construction to be accelerated, in a "civilizational leap." This argument is stated clearly in another part of the text;

"Let us concede (I do not agree with this) that in fact Brazilian people cannot cope with the hard labors of agriculture, such as those in Europe. But I ask: if corn produces at, say, a ratio of forty to one in the best lands of Portugal, and if it produces at more than 200 to one in Brazil, and the other cultivated plants follow the same proportion, and if the hours of labor required in agriculture are in the inverse order of its production, why should we need more robust workers and why should we work harder ?" (Silva, 1973 [1825]; 93).

Without these special ecological conditions, however, the potential for developing the country in a relatively short period of time would be weak. We have seen that Bonifácio did not have a fatalist view about human affairs. All things were seen by him the fruit of human action and its particular context and circumstances. A Native could be Newton, and Newton could have been a Native. Brazilian society was not condemned to be predatory and divided. The cancer of slavery, as Bonifácio read it, was responsible for the current state of affairs. The old province of São Paulo, for example, had "few slaves before the establishment of sugar plantations and mills" and, nonetheless, "its population and agriculture grew from one year to the next, and supported many other coastal and interior provinces with corn, beans, flour, bacon, pork, etc." (Silva, 1973 [1825]; 93). Such endogenous development had been thwarted by the adoption of slave-based monoculture. Nothing stood in the way of returning to endogenous development, except for the continuity of slavery and of the other structural evils related to it. Moreover, if adequate social reforms were adopted, Brazil's lag in relation to other countries could be recovered quickly with the help of its prodigious natural richness. This is one of the reasons for Bonifácio's tenacious concern with the destruction of nature. Brazil would have the worse of two worlds if it allowed itself to indulge in its traditional social vices while degrading its territory into something similar to the "deserts of Libya." This would be the definite ruin of any hope of national construction. If at least Brazil's

rich nature could be saved, there would always be the possibility of a gradual regeneration of the society and economy.[15]

However, strong-willed action was demanded for the conservation of this natural patrimony. Above all, it was necessary to improve knowledge about the geography of "this young and still mostly unknown country, because of the remarkable extension of its territory, of the many nations that inhabit it, and of the almost infinite variety of its natural and spontaneous productions" (Silva, 1973 [1821b]; 35). This extensive geographical survey should be executed by an "Academy of Agriculture" to be created in Brazil. This academy would promote the study of the country in terms of its "location on the globe," its "ports, rivers, lakes, mountains, valleys and forests," and its "natural and spontaneous productions, respectively in the three kingdoms, animal, floral and mineral." Moreover, this academy would research the capacity of the country to "acclimate fruits, plants and animals," starting from the analysis of "analogies and proportions found in our land in relation to other parts of the globe." A further point of investigation must be the "civilized, semi-barbarian or entirely barbarian American nations that live in our land, pointing carefully to the manners by which each one of them can be civilized." Knowledge thus accumulated would be presented in maps and texts drawn up for each of the provinces (Silva, 1973[1821b]; 37-38).

Of course, we can infer that for Bonifácio the production of such analytical and geographical materials had a political significance. This would be scientific knowledge directly applicable to the improvement of Brazilian social life. It would help make decisions about constructing new means of communication and transportation between provinces, and about the creation of new planned settlements. It would aid in the identification of "which insects are useful and which ones are enemies of man and his comfortable livelihood," so that ways could be devised to "stimulate the first and extinguish or at least reduce the excessive numbers of the second." Again we see the utilitarian and interventionist environmental perspective of Bonifácio. Rivers could be legitimately managed, as long as reason and intelligence were applied to the job, and it was also legitimate to promote the reduction or even extinction of certain species in the case that they threatened the "comfortable livelihood" of men or, even worse, his political fate. Consequently, it was necessary to fight "bats, rats, birds and animals that consume

[15] It was nature itself that explained the precarious survival of the rural population of Brazil, despite the predatory treatment given to it: "Brazilians hardly have to work in order to survive. Nature gives everything to them free. Superstition, ignorance and laziness have not been able to impoverish Brazilian backland dwellers" (Silva, no date, 7).

entire plantations, extinguish numerous herds and are notoriously responsible for damages to the state" (Silva, 1973 [1821b]; 36).

The second basic measure proposed by Bonifácio to conserve Brazilian natural resources was the creation of an all encompassing agency charged with the organization and supervision of their use. This was in line with what he had recommended for Portugal in 1815. Nonetheless, as Brazil was a young nation, Bonifácio's proposal was more inclusive and radical. He proposed an institution he called "General Directory of Political Economy," charged with public works, mines, forests, agriculture and factories (Silva, 1973 [1821b]; 21). The integrated policies of this agency would be responsible for conserving the navigable rivers and channels that Brazil had been "specially endowed." It should also care for fresh water lakes and dredge stagnated waters that threatened public health. The most important task would be the conservation of "hills, valleys, and forests that exist in the country," building up "the respectable bulwarks with which nature intended to protect the lands destined to provide sustenance to men, and to defend them from the insults of the wind, the snow, the excessive cold." These vast forests were crucial to the health of the Brazilian territory, because they were

"the reservoir of water, the perennial source of springs and rivers, the undoubted origin and immediate cause of the fertility of valleys, because everyday they send down the humus, formed by a variety of fermented matter created along the hills, and the diverse litter, animal, floral, mineral and mixed, that even the least instructed of men is able to recognize ... The grand trees that grow on mountain tops are the natural conductors of the thunderbolts and the pestilent vapors emanating from the valleys. Their work conserves our lives, defends our cattle and our buildings, the electric matter fertilizes the soil and gives new vegetative forces to it, and the vapors also rise to the ethereal region, where they are easily purified, as if in the most perfect laboratory, so that we can receive through the rains the continued and repeated favors from the Author of Nature. Finally, many animals of great value and usefulness live in the hills, in addition to an almost infinite numbers of birds from which we extract uncounted gains, not to mention the excellent wood and arboreal fruit and the minerals, that provide us with delicious things to eat and sustain our cattle and even serve as the origin of the fertility and abundance of fish in the rivers and seas" (Silva, 1973 [1821b]; 41).

This is a sophisticated and integrated cosmic vision, based on the best natural philosophy of the time. Following this passage, we find the words used in the first epigraph to this paper in which Bonifácio asks how men dare destroy, “in a single moment and without reasoning,” such a beneficial reality, concluding that “ignorance” explained this behavior. This could be the only possible reason for Bonifácio, given the immense amount of evil caused to social life. In addition to the deleterious effects mentioned above, because of deforestation, winds took hazardous directions, watersheds dried up, water levels fell and could no longer fertilize higher lands, rivers lost their impetus, fish became scarce, and lands eroded to t he point of desertification (Silva, 1973 [1821b]; 42). All this was outrageous to the eyes of an economist of nature converted into statesman.

The major responsibility for forest destruction lay with the country’s harmful agricultural system. Changing it demanded fighting against two outrageous practices: the cultivation of slopes and the use of the slash-and-burn method of fertilization. Bonifácio thought that rational agriculture could be practiced only in valleys, fields and lowlands, because they receive organic matter and pure water from the mountains. In these lands, it was legitimate to clear the soil of trees and to practice agriculture and animal husbandry, associated with channels constructed to help waters flow. The destruction of slopes was foolish. It was prompted only by laziness and by the ease of cutting down the forests, given that the cultivation of valley bottoms, the preparation of the soil and the struggle against the ants demanded care and work. It was easier to tear down the forests on the slopes and live off their ashes for three or four years. The lands destroyed in this manner were soon abandoned and were occupied by swarms of ants, while the perverse movement of renewed forest destruction and abandonment went on. This dynamic generated a true vicious cycle, because the presence of ants became ever more established. In turn, this was used as an excuse for new burnings with the argument that ant made any other method useless (Silva, 1973 [1821b]; 43).

Bonifácio thought the opposite: Only wholesome agriculture could overcome ants, that always bothered agriculturalists of the Brazilian tropics (see Dean, 1995; 107). This wholesome agriculture would be the one practiced with “stable and firm footing” in the open valleys and fields. Forests on the mountains should be protected or used with judgment, in accordance with actual needs, and not devastated “without care or rule.” Agriculture should employ plows, and “apply manures and prepare the soil for good and regular cultivation.” It should make use of the best scientific findings in the fields of

chemistry and natural history, and employ new machinery and technology that increased productivity. The "ignorant farmers" who made up the majority of the Brazilian rural population should be instructed about the trees that could best serve them, about which seeds should be planted, about which animals could be more useful, about how to plant woodlots and orchards of fruit trees, etc. (Silva, 1973 [1821b]; 44). Bonifácio believed in the possibility of an agriculture that conserved the health of the soil indefinitely, while obtaining better and better crops and generating a greater number of jobs. These goals were described in one of his manuscript notes:

"We need to choose the type of cultivation that most increases annual outcome and that employs the biggest number of workers. Cultivations that are harmful to the quality of the climate should be avoided as much as possible. We should prefer the type of cultivation that conserves the activity of the soil. We should prefer the type of cultivation that sustains our physical needs, at least until they are safely satisfied. To put everything in a single word, we should prefer the type of cultivation that more constantly increases annual reproduction" (Silva, no date, 4).

Bonifácio thus states his preference for subsistence agriculture, as "physical needs" had to be supplied before any other economic objective (at least until they were "safely satisfied"). Another remarkable aspect is the link between environmental concerns, such as the quality of the climate and of the terrain, and goals of political economy such as the employment of more workers and the increase of global production. Indeed, environmental and social matters were not disconnected in Bonifácio´s thought. The agricultural reform that he desired could not be attained only through technical means. It depended on broader changes in the structure of property and the temperament of farmers. Slave-holding *latifundia*, for example, could not lead to such a reform. The ideal was an economy of small, independent farmers.

Therefore, sweeping land reform was unavoidable in Brazil. The general lines of such a reform were written out in Bonifácio´s 1821 text (*Lembranças e Apontamentos*), and in manuscript notes. Had he remained in power, Bonifácio would probably have attempted to implement such a reform. His proposal involved a virtual cancellation, in practical terms, of older Portuguese land grants (the "sesmarias"). Unproductive tracts would revert to the State, and the grantee would be allowed to retain only up to half a square league, if he was ready to cultivate it immediately. Illegal squatters would have

the right to hold on to the parts of their claims that were cultivated, besides some acreage for expansion. Lands recovered by the State would be sold as small parcels. The revenues from such sales would finance the donation of other parcels to "poor Europeans, Natives, Mulattos, Negroes and freedmen," incorporating them into society. Geographic planning would be necessary in the demarcation of these parcels, in order to guarantee their access to water and to allow for population growth. There was an explicitly ecological condition for the sale or distribution of these plots: all those who were benefited would have to leave one sixth of their plots under forests and trees, native or planted (Silva, 1973 [1821a]; 21). In the manuscript version of the project, it was demanded also that farmers follow the "new European method of cultivation" (Silva, no date, 1). Bonifácio explained the meaning of this in his 1823 text about slavery:

"Once we have put an end to the terrible farming method that destroys forests and sterilizes lands in rapid succession, and introduced the improved cultivation methods of Europe, including the plow and other rustic instruments, fewer workers will be required to daily expand cultivation, farms will become stable and the land will become more fertile the more it is used" (Silva 1973 [1825]; 94).

This joint discussion of environmental, agrarian, and agricultural problems illustrates well Bonifácio´s integrated approach to Brazilian problems. The same piece of legislation dealt with several issues, such as the social inclusion of the poor, Natives and Blacks, the termination of large land holdings, the control of deforestation, technological modernization, and so on. All this was inserted in the broader matter of the geopolitical occupation of the territory. The method of *"sesmarias"* had created a situation in which the "backland settlements were spread out too much and isolated because of the immense distances that separate them ... leading the rural population to live dispersed like animals in immense fields and forests, with the highest losses for the administration of justice and the civilization of the country" (Silva, 1973 [1821a]; 21). Agrarian reform would bring with it a new manner of occupying space, creating a more compact and integrated society.

The reform of rural Brazil, together with the other elements of Bonifácio´s national project, had its major reference in the notion - almost mystical - of the "civilization of the country." Everything favoring it should be stimulated, and anything that obstructed it should be confronted, even if this meant going against the interests of

the powerful. Brazil would be important if it civilized itself. Bonifácio enjoyed comparing Brazil to a new China, because of its size and geographical richness, abundance of internal navigation and economic self-sufficiency (of course, he referred to an image of China before full English colonization in the 19th century). Actually, his utopia was even more ambitious, because he wanted Brazil similar to China in terms of "civil permanence and existence," but superior to it in terms of "prosperity" and "welfare" (Silva, 1973 [1821b]; 37).

The potential for self-sufficiency was a feature that Bonifácio was especially proud of. In this respect, it is important to emphasize that the mature Bonifácio became more and more critical of foreign loans, foreign trade, excessive dependence on exogenous cultures, including Europe. In one of his manuscript notes, one which recorded his more personal feelings, he actually remarked "that Brazil did not need foreign trade," proposing this should be left to "old and corrupt peoples" that need it in order to "not perish." Brazil could do without dependence on trade because it had "real assets," and not "fictional ones." Moreover, it was desirable that the new civilization to be created in the country not be dominated by the conversion of "the superfluous into the necessary", nor the supply of "hollow vanities and childish desires." Luxury "costs more than it is worth, impoverishes many to enrich few, sacrifices a thousand lives to yield scant pleasures." The new country could, therefore, be "commanding without being exhibitionist," refusing the domination of a "mercantile spirit," because "when each action is valued as a merchandise, talents and virtues are sold, everybody becomes merchants and nobody is any longer a man" (Silva, no date, 5). In contrast with the young and enthusiastic economist of the Lisbon academy, in 1790, the older Bonifácio looked at economic and productive progress as a mere instrument for the real objective of building the political independence and the moral fiber of Brazilian society. He wished that the country not lose its simple and rustic character, trading it for the affectations of the urban mode of European life (Silva, no date, 5). In another manuscript note, Bonifácio wrote that "In cultivated Europe everything is artificial and monotonous," while in the "favorable climate of Brazil" it was still possible to "observe the sublime greatness of nature, a nature that was rich without ornaments and beautiful without any dresses" (Silva, no date, 7).

This was the spirit that prevailed in 1821 and 1822 in the mind of this statesman-philosopher, so many times compared to the founding fathers of the US, when the horizons for the national construction of Brazil seemed vast and shining. Later political

developments, however, aborted his projects. In July of 1823 he was forced to abandon the cabinet. In November of the same year he was arrested and exiled to France, where he remained until 1829. The supporters of the new independent kingdom, an elite of slave owners and holders of large tracts of land, did not agree with Bonifácio´s proposals to extinguish slavery, divide large properties, and confront the predatory routines of lucrative export monocultures. This was the real reason for his fall, more than any of the political intrigues and junctures that he experienced while in power. It is true that his political defeat was aided by his strong-willed manner of exercising power and by his inability to co-opt opponents who were in reality not distant from his points of view. Bonifácio was an intellectual, not a politician, and exercised power in the same arrogant and abrupt manner with which he engaged in academic debates. His contempt for pompousness, title of nobility, and the artificial rules of etiquette also contributed to many disagreements with the elite of a rising monarchy. All of this was secondary, however, in face of the threat that his almost revolutionary project for social and environmental change represented to this elite.

In any case, defeat broke Bonifácio, both politically and psychologically. Despite all the free time he had in exile, and despite his many intellectual projects, no relevant text was produced during this period. He was completely taken by petty political intrigues and debates about the Brazilian scene. When he returned to Brazil, at the advanced age of 65, his plan to retire to the bucolic island of Paquetá (inside Guanabara bay, next to Rio de Janeiro) was forgotten in exchange for an unexpected and brief return to the epicenter of Brazilian political conflicts. In April of 1831, he was designated as tutor of the children of the Emperor Pedro I, who had just renounced his throne. From this underprivileged position, political intrigue was rampant, but the possibilities of influencing the country's government were slim. Chances for reinstating his national project were even slimmer. He managed to hang on to his appointment for some time, but was again brushed aside in 1833. Until 1835, he was involved in a long court battle. In the few years that separated him from death, in April of 1838, Bonifácio, old and with ailing health, settled in Paquetá Island, but again did not conclude any important text. Therefore, for practical purposes his role in the history of Brazilian political thought ends in 1823. He did not relinquish his ideas, though. In September of 1831, for example, he temporarily held a seat in the House of Representatives, and took the occasion to repeat, in a somewhat depressing manner, the same theses preached earlier. According to the notes of the House's secretary, Bonifácio stated that "farmers should be taught

how to better cultivate their lands." About the United States, under debate in the House, he stated that "there were two different nations there, one of them not very progressive in terms of civilization, because it cuts forests that it does not know how to use, while the other takes advantage of these forests." He also is recorded as having said things like: "cutting down and burning our precious woods only to dig a hole and plant a seed of bean or corn was the cultivation method of the Negroes from Angola, and the farmers who moved away as soon as their lands started to produce less than they did when they started to plant them could well be compared to the errant tribes of the Saara and Arabia." Finally, he said "that Brazil did not need sugar mills with many slaves, because India produced much sugar and had no slaves" (Silva, 1973 [1831]; 61). Bonifácio´s ideas were alive, although the author was only a shadow of the man he had once been.

In the decades following his death, his work as a statesman attained strong official recognition. His name was made into a myth, as he became a national hero, inspiring statues and monuments. However, the essential part of his ideas - their reformist content - was brushed aside by the country's ruling elite. His ideas have not been totally neglected, though, and they managed to influence the continuation of the critical debate about the social and environmental maladies of Brazil along the 19th and 20th centuries.

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