

## *Feature Story*

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### **PAU BRASIL: THE SYMBOL OF BRAZIL IS ENDANGERED**

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The pau-brasil tree (*Caesalpinia Equinata*), one of Brazil's national symbols - indeed, from it stemmed the country's very name --, is now facing the threat of extinction.

Originally native to the coastal Mata Atlantica (the Atlantic rain forest), pau-brasil suffered severe exploitation from the period of Discovery, when it was found in abundant supply on the coastal range between the states of Rio Grande do Norte and Rio de Janeiro. Now the tree has disappeared from just about all the coastal states of Brazil.

The few specimens still to be found are located in the rare remnant areas of the Mata Atlantica: in Bahia state, for example, in the Mico-Leao-de-Cara-Dourada Biological Reserve, in Una, and in the Monte Pascoal National Park.

The most significant concentration, however, thrives in the district of Porto Seguro, on an 8,500-hectare range of virgin forest. Here one can still marvel at the beauty and the majestic countenance of the hundreds of indigenous pau-brasil trees growing old under the safeguard of the dense forest.

In order to reach this area, however, one must walk approximately two hours over the five kilometers of narrow dirt road linking Porto Seguro to Eunapolis. The strip holds all the natural obstacles a tropical forest can boast -- a rich variety of mosquitoes, poisonous snakes, lianas, creeks and waterfalls, not to mention the steep uphill and downhill.

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At last the first pau-brasil tree comes into sight. Approximately 40 meters tall, it is close to 86 cm wide at the trunk. The trees are estimated to be over one hundred years old. This specimen, along with hundreds of others just about the same size, makes up part of the two contiguous Mata Atlantica natural forest reserves. The first, stretching over an area of 1,200 hectares, belongs to the Executive Commission of the Cocoa Farming Plan (Ceplac), and represents the Pau-Brasil Ecological Station (Espab). The other, spanning a full 7,300 hectares, belongs to the Companhia Vale do Rio Doce.

The area is situated, paradoxically enough, approximately 16 kilometers from the city of Porto Seguro. It was on the shores of this old city that Brazil's discoverer, Pedro Alvares Cabral landed, in the year 1500, marking the very outset of the devastation of the pau-brasil.

**MONOPOLY**

Popular as it had been from the IX Century among the Europeans, who imported the wood from the East and extracted its red pigment for dyeing, pau-brasil was considered by the Portuguese settlers the major source of wealth to be exploited in the new land.

The Brazilian Indians, however, could not grasp the newcomers' interest in the tree - known to them as Ibiratinga, meaning red wood -- from which they extracted dye for their own painting.

Extractivism accelerated the appropriation and settling of the new land, and the exploitation of pau-brasil was monopolized by the Portuguese Crown from 1501 to the mid-IXX Century. Pau-brasil wood exports were so heavy they soared to a yearly average of two thousand tons.

Continuous exploitation of pau-brasil was carried on way into the XX Century, and only halted in the 1980s, when the tree became practically extinct. One of the last shippings dates recently to the 1970s, when 50 tons of pau-brasil wood was exported from southern Bahia to Europe, all earmarked for the manufacture of violin bows.

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### **DEVASTATION**

The halt in pau-brasil extraction in the 1970s marked the rapid acceleration of the devastation of the Mata Atlantica in the southern and southernmost regions of Bahia. The inauguration of the BR-101 highway in 1972 made the region even more attractive to the migration of wood merchants from Espirito Santo in search of prime-quality wood, already extinct in their own state.

The Bahia state administration even created incentives for the formation of a wood-cutting center in the Eunapolis region, just 644 kilometers away from the state capital of Salvador - without ever obliging any of the over 300 existing sawmills to replant one single tree.

The result of such a policy is hideous: the 1.5 million hectares of continuous Mata Atlantica existing 50 years ago has been narrowed down to a striking 58,000 hectares, according to data released by Ceplac. And the facts are much the same nationwide.

A recent survey conducted by the SOS Mata Atlantica Foundation, with headquarters in Sao Paulo, shows that, of the original 110 million hectares of Brazilian Mata Atlantica, there remains approximately 8.8 million hectares. The contempt for the preservation of the country's native forests has been relentless: in the towns of southern Bahia, for example, until recently, many mayors considered the expansion of the electricity network with pau-brasil logs perfectly "natural".

### **THE GUARDIAN ANGELS**

Fortunately, pau-brasil has its own defenders. This fact alone has spared the species of total extinction. Professor Paulo de Tarso Alvim, a technical consultant at Ceplac and undoubtedly the world's foremost authority in issues regarding cocoa and tropical forests, is one such guardian angel.

In 1969, representing Ceplac, and following the decision reached by the Brazilian Foundation for the Preservation of Nature, he purchased/appropriated the land which today shelters the Pau-Brasil Ecological Station. A consultant at Companhia Vale do Rio Doce as well, Alvim also succeeded in ensuring the preservation of the area contiguous to the ecological station, otherwise sure to be exploited for charcoal processing.

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As a result of these efforts, a precious stretch of the Mata Atlantica was kept practically intact.

Ceplac researchers have so far catalogued no less than 270 tropical tree species in the ecological station. Moreover, the area shelters a variety of animal species considered to be on the verge of extinction, such as the wild deer, the tapir, the jaguar, countless monkey species and a huge variety of snakes.

Also relevant is that by the end of last year the Ecological Station had already produced 100,000 pau-brasil saplings, which have been distributed throughout the country.

Espab's future According to Paulo Alvim, former president Ernesto Geisel was an enthusiast of the preservation of pau-brasil, and besides decreeing the species the national tree-symbol in 1978 (which in practice by no means sufficed to preserve the species), he idealized the creation of a program under which 25 saplings would be distributed to each Brazilian municipality. The program was never carried through after all, but Alvim still recalls the last delivery of saplings as commissioned by the federal government: "One of those mammoth Air Force planes landed at the Porto Seguro airport and carried a thousand saplings away to Brasilia."

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Espab's future remains uncertain. The Station has been decommissioned for a full year now, and was recently assigned by commodatum to the care of the Porto Seguro municipality, for the implementation of an ecological center created recently with the incentive of the federal government.

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Ceplac technicians are reportedly concerned with the outcome of the project and the ultimate fate of Espab. Sociologist Alda Vitoria, the federal government employee appointed to oversee the implementation of the ecological center, and currently at the service of the Porto Seguro city hall, asserts, however, that the area will be well preserved and protected by the city administration.

### **ONE MILLION SAPLINGS**

If on the one hand Espab's output of pau-brasil saplings has reached a standstill, on the other that of the Pau-Brasil National Foundation (Funbrasil), headquartered in the city of Recife, continues at full speed thanks to the unselfish efforts of one man.

Roldao Siqueira Fontes, 61, a retired professor/teacher, currently the president of the Foundation, a naturalist and nationalist, has been struggling for the preservation of the species for 22 years.

By launching a national campaign for pau-brasil preservation, he contributed greatly to the formation of the Tapacura Ecological Station - founded in the state of Pernambuco, near the site where pau-brasil was rediscovered in the 1920s --, undertaken by the Rural University of Pernambuco for the production of pau-brasil saplings.

(Professor) Fontes has succeeded in distributing over one million saplings to municipal administrations, companies, schools and citizens who have demonstrated interest in the project.

This year alone will see the output of 400 saplings, half of which is destined to the City Hall of Cabo Frio, Rio de Janeiro. The city plans to mark its presence in next year's United Nations Conference on Environment and Development (UNCED) by planting pau-brasil trees on its streets and city squares.

Fontes' work gave incentive to other planters. Such is the case of the Pernambuco-born artist Rosa Cabral. Currently based in Salvador, Bahia, Cabral has been planting pau-brasil on farms and on hotel and city-hall grounds for four years.

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Last year, she started a record on all the trees she had planted, in order to better accompany their development. She has already catalogued 300 trees, all of which are visited on a regular basis: "I'll harass anyone who has a piece of land where I can plant one of these trees," she claims.

The Brazilian Institute for Environment and Renewable Natural Resources (Ibama), also produces and distributes pau-brasil saplings - although still on a relatively small scale: the Institute's tree farm in Salvador turns out a monthly average of 500 pau-brasil saplings.

The head of Ibama's regional office in the Bahian capital, Cezar Piraja, said the institute is expected to be increasing its sapling output within the following months, in a project that also involves the tree farm of the Juazeiro district. He reckoned that the preservation of the pau-brasil species will be safeguarded as the community becomes increasingly aware of the tree's historical importance.

Ibama banned tree-cutting on the entire stretch of the Mata Atlantica one year ago, even on private property. "That represents a step in the right direction," said Pirajá.

(Professor) Paulo Alvim, of Ceplac, claimed the action was not sufficient. His plans are to reactivate the Pau-Brasil Ecological Station, and carry on with the research and cultivation of pau-brasil saplings. He wants to resume the sapling donations to all Brazilian municipalities.

Following the recent satellite-mapping of the Brazilian Mata Atlantica's devastated areas, the SOS Mata Atlantica Foundation is currently struggling for the ban on tree-cutting in all northeastern states, which have been most directly stricken by the problem.

The foundation's technical coordinator, Inez de Souza Dias, points out that the pau-brasil case portrays precisely how the natural reserves of the Atlantic coastal forest have been wasted, rather than well employed, by successive administrations in Brazil.

"All this neglect, reaching such absurd extents, all this degradation, which I'm afraid is irreversible, is the inevitable consequence of poor management and sheer lack of respect for Nature," she concludes. Dias claims that the Foundation (which defends prison terms for irrational deforestation practices) will carry out the task of surveying the devastation of the Mata Atlantica.

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"We are now starting work on the detailing of the forest area stretching from southern Bahia, in Northeastern Brazil, to the southernmost corners of the country, in Rio Grande do Sul state," she said.

The job will be undertaken in cooperation with the Ibama and the National Institute for Space Research (Inpe).

### PAU BRASIL 2 - REDDISH PIGMENT

Historically, the commercial interest stirred by pau-brasil derived from the reddish pigment (called *brasilina*) extracted from its wood, the color of fire embers (in Portuguese, brasa).

The pigment was exported to Europe by the Arabs back in the ninth Century, destined for the dyeing of wool, cotton and silk. Another widespread application of the pigment was in the manufacture of cosmetic products.

Pau-brasil belongs to the leguminosae family native to tropical forests. Its average height is of 30 meters, though some can grow up to 40 meters. It develops thorns in its earlier years of growth, providing protection against predators. Once it has matured into medium height, those thorns develop into a scaly bark.

From the moment the first synthetic dyes came on the market, brasilina extraction gradually lost all commercial appeal. Industrial interests then shifted to the tree's core, among the most highly resistant of all prime-quality woods.

Widespread application of pau-brasil wood was subsequently seen in the civil and naval construction industries, and in furniture manufacture. In the last years of pau-brasil exploitation, the wood was made into violins and other musical instruments, which require the dual characteristics of strength and flexibility found in the wood.

Pau-brasil also features tonic properties, and from its seeds can be extracted tannin, a substance of various applications - the tanning of leather, fur and fishing nets, and the painting of ships, just to name a few.