

BRAZILIAN TREES AND THEIR ADAPTATION IN THE SOUTHERN USA¹

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Only one country in the world has the name of a tree: BRAZIL. The name of this country existed, was predestined, before the discovery of our Brazilian land by the Portuguese in 1500.

The history of the Pau Brasil (Brazilian wood) begins in the 10th century. In those days, red woods were taken to Europe, where red dyes were extracted from them named *brecilis*, *brazil*, *brazyly*, or *brasilii*. The names came from the original *brasa*, which means "embers." These trees belonged to several species of *Caesalpinaceae*, a group which includes 60 kinds of trees, shrubs, and hook climbers. Almost all are tropical and were known for many years in the East Indies. These plants spread to India, Sumatra, and other regions of Asia and are called *sappan* in the Malayan Archipelago (*sappan* means red).

The Pau Brasil, *Caesalpinia echinata* Lamb, is of all the trees and woods of the Brazilian flora, the one with the most historical importance. This new and prosperous extractive business became the source of the first national wealth in Brazil. Historian Brandonio said in the 16th century that "many Portuguese became rich by exporting Pau Brasil."

The Pau Brasil started the Brazilian agricultural exploitation cycles. In its own subordinate way, it is characteristic of our country's economic history. The Pau Brasil cycle was followed by the sugar, the gold, and the coffee cycles.

The Pau Brasil cycle was fantastic. One of the most promising news items transmitted by Brazil's discoverer, Pedro Alvarez Cabral, was that they had found a redwood tree which produced a red dye, and which was the same as the one brought by the Europeans from the East Indies.

The news spread rapidly. It attracted the interest of other Europeans. Its consequence was the arrival in Brazil of Spaniards, Dutch, French,

and Englishmen, who started an illegal and intense traffic of the "red flame" colored wood in huge quantities. The documented exploitation of the Pau Brasil started in 1501 with Americo Vesputio and continued in 1503 with Goncalo Coelho.

In 1511 the exploitation of this tree came under government control with the formation of a monopoly headed by Fernando de Noronha, a Jew related by commercial interests to other capitalists of the same ethnical origin. This concession included 300 "leguas" (about 750 miles) along the Atlantic Coast, and a payment to the Portuguese Crown of a tax of 1/5 of the wood value, with the condition that the Portuguese government construct fortresses to fight the Indians.

Business was extremely good, and this exploitation undoubtedly began the high rate of devastation of the Brazilian forest. The exact value of those fantastic gains will never be calculated. Just to get an idea, let us remember an incident which happened in 1527, when French ships which illegally carried Pau Brasil were destroyed as a punishment for this crime, their cargo was valued in 600,000 cruzados, which would nowadays be 150,000,000 cruzeiros, or \$15,000,000 U.S. currency.

The Pau Brasil woods were destroyed as the centuries passed. As the distance of the exploitation sites from the coast increased, the embarking centers raised its price, for its transport was dearer and more difficult every day. Some historians register in 1875 the last embarkment of Pau Brasil to Europe, but the real end of that trade was in the beginning of the 20th century. As a result of industrial progress in the chemicals, anilines, which could be extracted from soft coal, were discovered. These dyes were substituted for those extracted from the wood, thus ending the first cycle of economic activity of Brazil.

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As a forest tree, Pau Brasil attains a height of more than 30 meters (about 90 feet). New growth is showy red, and the flowers, in short erect clusters at the tips of the branches, are very graceful, of unsurpassed beauty and form. A rapid grower, much branched, it deserves to be at the top of the list of trees for street planting or in ornamental groups. The blooming period is in November-December in Brazil, corresponding to April and May in the United States. This tree grows well in the most varied conditions of soil and climate. It's clustered inflorescences of gold-yellow cover the crown completely. It is greatly valued as an ornamental tree, and its blossoms have a faint fragrance. It will surely be a wonderful tree to add to the landscape of the South of this country.

Without doubt, it is a historical symbol representing the wood era of all three Americas. Due to the carelessness of past generations this beautiful species is in danger of extinction, and it is our duty to repair these errors by planting these trees wherever it is possible ecologically.

The dye from wood of dead trees may be replaced by synthetic chemicals, but living trees and forests cannot be substituted by plastic trees. We are altering nature; we are modifying climates; we are exterminating the fauna which lives together with these trees; we may be organizing the collective suicide of mankind.

It is our human duty to defend the living existence of our planet, the earth. No organization could better do this than the In-

ternational Society of Arboriculture. I appeal to all its members to start a communication current between the arboriculturists of all three Americas with the intention of better knowing our trees, helping each other to preserve trees, exchange trees, and plant trees in order to create permanent woodlands, parks, and arboreta so that the air to be breathed by future generations can be more pure than that we must breathe now.

The International Society of Arboriculture must open its doors and start a conscription of members from all the countries of the three Americas to be able to make real the ideas we proclaim.

Other Brazilian trees of possible value as shade and ornamentals in the Southern USA are as follows: *Amburana cearensis*, *Andira fraxinifolia*, *Araucaria angustifolia*, *Caesalpinia peltophoroides*, *Calabura muntingia*, *Cassia apoucouita*, *C. exelsa*, *C. ferruginea*, *C. grandis*, *C. laevigata*, *C. leptophylla*, *C. martiana*, *C. mutliouga*, *C. sylvestris*, *Chorisia speciosa*, *Cordia* sp., *Erythrina falcata*, *E. mulungu*, *E. verna*, *Melanoxydon braunia*, *Peireskia bleg*, *Peltophorum vogelianum*, *Phylocarpus pterocarpus*, *Piteselobium edivali*, *Platipodium elegans*, *Prunus sphaecocarpa*, *Tabebuia araliacea*, *T. avellanadae* var. *pauleasis*, *T. impetiginosa*, *T. roseo alba*, *Tibouchina granulosa*, *T. granulosa rosa*, *T. pulchra*, *Triplaris surinamensis*.

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ABSTRACT

Stein, J.D. 1976. **Insects: a guide to their collection, identification, preservation, and shipment.** USDA Forest Service Research Note RM-311, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado.

Current urban forestry programs emphasize protection and management of planted trees. A survival survey in the Plains area indicated that 39 percent of all trees encountered were dead, with the majority mortality factor attributed to insects. Thus it is desirable to identify the insects responsible for damage, determine their biology, establish whether the insect is a new pest or a new outbreak of an old pest, and recommend control measures, if appropriate. A common question from property owners is, "How do we get this information?" This Note was compiled to inform the public about whom to contact for insect identification, and how to adequately collect, preserve, and ship specimens to the insect specialist.