

# IMPER

An endangered tree casts a shadow over bow makers and musicians worldwide.

# ILED

# PERNAMBUCO

by Heidi Waleson



Flowers of the pernambuco or caesalpinia echinata tree

Charles Espey

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This past June, delegates from 151 countries gathered in The Hague to consider the fate of many species, including sharks, orchids, tigers, slow lorises, and Japanese yew, at the Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Debate also swirled around a proposal to list pernambuco, a hardwood that grows in Brazil, on CITES Appendix II.

What does all this have to do with the orchestra world? Plenty. Pernambuco, otherwise known as *Caesalpinia echinata* or pau-brasil, is the principal material used in the making of high-quality bows for stringed instruments. If pernambuco were listed, trade in the wood would be subject to international controls and regulations. And if the proposal were passed in its original form, including “all parts and derivatives,” existing bows would also be subject to controls and restrictions when crossing international borders. This would entail a cumbersome system of permits for traveling musicians, with the potential for different permits for each country, as well as the education and cooperation of customs officials all over the world, who would have been trained to recognize the wood.

The proposal had a high probability of passage: It was submitted by Brazil, and

CITES tends to favor the adoption of proposals submitted by countries to which the species in question is native. But with the aid of strenuous lobbying efforts by the International Pernambuco Conservation Initiative (IPCI)—an organization of bow makers—and American representatives of instrument makers and musicians, including NAMM (International Music Products Association), the American Federation of Musicians (AFM), and the American Symphony Orchestra League, the CITES decision finalized on June 15 was a compromise: Pernambuco was listed, but only in the form of “logs, sawn wood, veneer sheets and unfinished wood and articles used for the fabrication of bows for stringed musical instruments.” Finished bows transported internationally would not be subject to CITES requirements. Heather Noonan, the League’s vice president for advocacy, says, “The U.S. Trade Representative and the U.S. Fish and Wildlife representatives who were at CITES told us that it came down to

‘What’s the most effective measure to take towards conserving the species?’ They felt that there was no sense in burdening the music community with a requirement that wouldn’t actually help.”

Noonan adds that this does not mean the issue is closed. And Lynn Hannings, a Maine-based bow maker and president of IPCI who spoke at the CITES meeting in The Hague, also points out that the problem is far from solved. Once a species is “on the CITES radar,” she says, its progress will be monitored. If the species appears more endangered, the next step could be a “parts and derivatives” restriction, or even a listing on Appendix I, which effectively prohibits trade. Either could be disastrous for pernambuco bows and the people who make and use them.

For now, bow makers will bear the brunt of the CITES listing. They are required to register all existing stocks of the wood with their governments within 90 days of the listing—a time-consuming and expensive process. Those stocks will be certified as

“pre-Convention,” and thus legal for the purpose of international trade. But there is more to be done before the CITES plants committee meets next year, and before the next full CITES conference in 2009.

Hannings’s goal is to involve working musicians in IPCI’s unusual and ambitious conservation effort: the Programa Pau-Brasil launched in 2004, which is dedicated to the sustainable replanting of new pernambuco trees in Brazil. Demonstrating a willingness and ability to reverse the loss of pernambuco, Hannings says, will count a great deal at CITES. (Indeed, the Brazilian representative to the CITES meeting in The Hague told her that “a major investment in Brazil” would be required.) So far, the bow makers have been doing all the heavy lifting, launching the program and contributing more than \$300,000 to the work; now, Hannings says, it is critical to expand. To do that, the IPCI program will need the support of the end users—that is, the musicians who count on pernambuco bows for their art and their livelihood.

Charles Espy

The next step could be a “parts and derivatives” restriction, or even

Tools of the bow-makers trade, which depends on fine pernambuco.



Pernambuco seedlings at the Biofábrica, a nursery affiliated with the IPCI's Project Pau-brasil in Bahia

Charles Espy

## a listing on CITES Appendix I, which effectively prohibits trade. Either could be disastrous for pernambuco bows and the people who make and use them.

Pernambuco became the bow maker's wood of choice in the late 18th century, when François-Xavier Tourte (responsible for the design of the modern bow and often called the Stradivari of the bow) discovered that its unusual combination of density and flexibility made it an ideal bow material for modern string instruments. The tree, which grows only in the Atlantic rain-forest region of Brazil (Mata Atlântica) had been known in Europe for centuries as a source of red dye, but aniline dyes superseded it in that use. Today, while other woods and carbon fiber are used for student-level bows, almost all professional-quality bows are made from pernambuco. Other woods have been tried, says Yung Chin, a New York-based bow maker who is chairman of IPCI International, but "pernambuco is clearly the best."

Unfortunately, the species has been deci-

mated by rampant deforestation in Brazil. Vast tracts of the Mata Atlântica have been cleared for development, as well as for the cultivation of eucalyptus for pulp mills, and sugar cane for the production of ethanol. And not only bow makers have appreciated the wood's qualities: By virtue of its hardness and imperviousness to rot and insects, pernambuco has also been used in Brazil for fence posts and railroad ties. Pernambuco burns very hot, so it has also been used for charcoal in the steel industry. In 1992, along with 105 other species, Brazil listed pernambuco on its own endangered-species list, making it illegal to cut the wood.

### Awareness and Action

The implications for bow makers were not felt at once. Indeed, Hannings and Chin say they were not even aware that pernambuco

had been listed as an endangered species until 2002. "Our only contact with Brazil was through Brazilian wood traders, and they didn't tell us," Hannings says. She immediately sent a letter to other bow makers, urging a moratorium on purchase of the wood.

For Hannings and other bow makers of her generation, the pernambuco restriction actually had little practical effect. "I studied with Bill Salchow, and in 1970 I purchased the wood I needed for my career," she says. "There was a vast supply of it available then, since it coincided with a major cutting of rain forest for the paper industry. I went down to the docks in Brooklyn to get it. Forty percent of the rain-forest wood went to international markets—much of it to the U.S., as ballast in ships, flooring for dance floors, and other uses. It was certainly not

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for bow making—there were only four of us in the U.S. at that point!" Indeed, the market for the wood among U.S. bow makers remains relatively small: Chin and Hannings estimate that there are about 50 bow makers in the country, each of whom makes eleven to thirteen bows per year. Hannings says that American bow makers

Guarana and Domingos Martins, Brazil.

Since the 1992 Brazilian endangered species listing, any pernambuco sold in or exported from Brazil has required certification from IBAMA, Brazil's agency for environmental protection. In principle, only wood that was cut before 1992, or "recycled" wood, may be legally traded.

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now hold pernambuco stocks that will last them all for about 50 years.

European artisans have a similarly modest demand, with the exception of Germany, which has several bow-making centers and large workshops. Klaus Grünke, one of the founders of IPCI, runs a family workshop in Bubenreuth, Germany that produces about 200 bows a year. (Larger, factory-style workshops may make several thousand.) Although Germany was once the center of factory production of student-quality bows, that activity has now shifted to China and not so coincidentally to Brazil, where labor costs are lower. With production down by half, pernambuco stocks in Germany will probably last about fifteen years, Grünke says.

While few reliable figures are available for worldwide production of bows—Grünke guesses about 80,000 per year, including those made of other woods and carbon fiber, and Yung Chin says that fifteen to eighteen percent of all bows are pernambuco—China and Brazil appear to be the biggest single producers. The Brazilian bow-making industry was launched by Horst John, a German immigrant and wood dealer, who started a bow-making operation in 1976, sending workers to Germany to be trained. In the 1990s, several other bow-making enterprises were started by former employees of Horst John, centered in

But the situation is extremely complicated. Enforcement is difficult. Wood dealers and bow makers in Brazil have been investigated by their own government agencies; IBAMA officials have been found to be complicit in illegal dealings in endangered woods. Brazilian bow-making companies hold large stocks of the wood, some acquired pre-1992 (Horst John's website, for example, mentions its "decades-old private stock, a reserve to last many years"), others not. American and European buyers are increasingly reluctant to purchase new wood from Brazil, fearing they may end up embroiled in legal dramas. Meanwhile, much inferior pernambuco is thought to be exported to China, where environmental protection enforcement is also limited, through back-door channels.

Also unclear is how many pernambuco trees are still standing in the wild, and how much pernambuco is actually needed to make bows. "It depends on how well the harvesting is done," Grünke says. "If it is random, it's not too efficient. With better forestry management, one could look at a tree before it was cut, take a core wood sample, and find the weight of the tree. The yearly requirement might be 200 or maybe 400 cubic meters a year—it's difficult to say how many trees that is. Still, it's not very much, compared to other timber species." Pernambuco also varies in quality, with only the best being suitable for top-level

bows. Not all trees, and not all wood from any given tree, may be useful.

International efforts by bow makers to ensure the long-term survival of the pernambuco species began in 1999, when Marco Ciambelli, founder and director of the organization Comurnat, met with a group of bow makers in France. Ciambelli, whose own family members had been tortoiseshell workers in Italy and France for generations until that material was restricted in 1989 in order to protect the sea turtle, founded Comurnat to enlist craftspeople in the conservation of wild species on which their work depends. He had heard that pernambuco might be listed by CITES, and urged the bow makers to organize and come up with a conservation initiative. The result was IPCI.

In 2001, European and American bow makers, aided by some representatives of the Brazilian bow-making industry, launched their research into pernambuco and its current condition in Brazil. They enlisted the help of Haroldo Calvacente de Lima, director of the Rio de Janeiro Botanical Garden, and developed a relationship with Setor de Planejamento Acadêmico (SEPLAC), a Brazilian scientific research center that had focused on the growing of cacao. "Haroldo came to Paris in 2002 and gave us a five-year plan that would cost 500,000 euros," Grünke says. "We asked a lot of colleagues to donate the price of a bow, and we quickly had 100,000 euros, so that we could go into negotiations with the ministry of agriculture in Brazil." The agreement was laboriously worked out, but a change of government in Brazil, as well as a change of leadership at SEPLAC, delayed the start of the program for a year.

It was a remarkable undertaking, especially for a disparate group of artisans who tend to work on their own. "This was a Herculean effort over many years by these bow makers to get an industry-wide mobilization going to address the needs of a tree," says Russ Rymer, who is writing a book about pernambuco. "It took tremendous leadership. They raised money, sent delegations of bow makers into the Brazilian jungle, sorted out lots of tricky politics, created legal agreements,

and involved all the elements of society in Brazil that you need to involve in order to get things done. It's unique, and if it continues to work, it could be a model for resource conservation around the world."

### Craftsmen Conservationists

Along with funding essential research about the tree itself (its flowering, climate, soil, growth cycle, etc., plus inventories of trees now standing in the wild), IPCI's Programa Pau-Brasil (PPB) is planting trees—500,000 seedlings over five years. To do this effectively, it has recruited farmers in the Bahia area to integrate pernambuco trees as shade for cash crops such as beans, orchids, and cacao. So far, more than 100,000 trees have been planted. "It gives the farmers a stipend, and technical support, the ability to grow the trees, and an economic incentive to keep them rather than cutting them down," Hannings says. Before, the only economic value of the trees was as cut wood—or land cleared for other uses. IPCI's model, which incorporates social, cultural, and economic factors as well as environmental issues in the conservation of pernambuco, recognizes that simply planting trees is not enough.

In addition to the IPCI project, other pernambuco reforestation is underway. Horst John, recognizing that the wood needed to be renewed, started a planting operation 25 years ago, putting 60,000 seedlings into the ground before his death in 1997. His successor, Jacy Sousa, has continued the effort, and 10 percent of the price of each bow sale goes to reforestation; Sousa also recently contributed 20,000 of her company's seedlings to IPCI. "We've tested the wood from Horst John's plantations—it's very good," Yung Chin says. Other Brazilian bow makers have also started replanting efforts.

Reforestation, and the creation of a sustainable plan for use, is a very long-range effort, however. Hardwood trees like pernambuco take decades to mature, and once the wood is cut, it must be aged for many more years before it is usable for bow making. Grünke, Hannings, Chin, and their colleagues recognize they are not growing the wood for their own use.

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They see the work as a good-faith effort to replenish the material that has been the basis of their craft, and to make sure that it exists for those bow makers and musicians who follow them.

Another factor that both drives and impedes the bow makers' efforts is the perception of them as eco-pirates, ravaging

on behalf of the orchestra's musicians to urge the U.S. to grant an exemption for finished bows. "We strongly support conservation efforts for endangered species of wood, including pernambuco, by way of appropriate restrictions on cut lumber," she wrote. "However, an exemption for finished products is absolutely necessary in order for

Bow makers recognize that they are not growing the wood for their own use. Their work is a good-faith effort to replenish the material that has been the basis of their craft.

the forests of a third-world country for their own economic gain. "The Atlantic rain forest is an enormous disaster," Hanning says. "If we were the sole reason for the loss of pernambuco, there would be a lush forest with the pernambuco missing!" Ironically, the American bow makers were singled out for opprobrium in materials circulated at CITES by environmental groups, despite the fact that the U.S. is actually one of the smaller markets for wood, albeit a huge one for finished bows.

Klaus Grünke says that CITES recognizes that listings can be a blunt instrument. He was encouraged by the reception of IPCI's efforts at the Conference. "We got the chance to present our actions, and we are recognized in the plants committee as a role model," he says. However, the plants committee, which meets next year, will want to see substantial progress: completed inventories, more information, and more seedlings in the ground.

That progress, IPCI's leaders point out, will depend on the mobilization of other constituents with an interest in the future of pernambuco. The first steps have been taken: NAMM, the AFM, and the League reached out to musicians, asking them to send comments to U.S. Fish and Wildlife, one of the government agencies responsible for CITES, for its pre-Conference hearings on pernambuco. A number of orchestras responded. Fiona Simon, orchestra committee chair of the New York Philharmonic, wrote

us to travel with our bows, and in so doing, bring the gift of music to audiences around the world."

So far, the bow makers have been paying for the program, raising funds through such means as adding \$1 to the cost of each bow repair, which goes to the planting efforts. A few benefit concerts, particularly with student orchestras, have helped a bit to raise awareness. Involvement of a broader segment of the music community, however, could help raise the funds, widen the profile of the problem, and increase the efforts being made towards its solution. There's plenty to do—more education efforts in Brazil, more research, and of course, more trees. "Recently, the coordinator of our program in Brazil said that he could place 240,000 additional seedlings in the community," Hanning says. "The original 500,000 was an arbitrary number—it's unreasonable to think our five-year program will fix the problem. But it's exciting—pernambuco is a renewable resource; we just need to find ways to do it with responsible behaviors and find ways to incorporate the cost of conservation in what we do. For example, when you have your bow repaired, you pay a surcharge so future generations will have that wood available to them. People are beginning to understand that." ~

Heidi Waleson is opera critic for *The Wall Street Journal* and a New York-based freelance writer.