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Listening for Musical Tonewood in the Appalachian and Carpathian Mountains

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This paper introduces the trade and practice of cutting tonewood, wood used in the production of musical instruments, in both the Appalachian Mountains of the United States and the Carpathian Mountains of Romania. As a work of collaborative ethnography, this work combines the first-person narrative of John Preston, a tonewood cutter in West Virginia and Transylvania, and contextual framing and analysis by Jasper Waugh-Quasebarth. Through the text we explore how the production of tonewood creates global, affective connections between mountain regions and reveals unique challenges to the global forests of the Appalachian and Carpathian Mountains.

Key-words: *Musical instruments, forests, Appalachia, global mountain regions, craft*

1. Introduction

In 2015, as an anthropology doctoral student, Jasper Waugh-Quasebarth sought out John Preston for an interview while conducting research on the meaning of work in Appalachian musical instrument craft. Finding a common interest in comparing the mountain regions in which they were formed and had traveled, they began a collaborative relationship which saw them travel to Romania together with John teaching Jasper the processes and skills of learning to search for and cut tonewood, and Jasper documenting the process towards a dissertation in anthropology on the meaning of work in forest environments. Throughout the process, it became clear that an important aspect of learning to relate to the wood in the craft process was learning to build relationships across mountain regions. In the interest of a collaborative ethnographic process (Bell 2013; Lassiter 2005) that reconfigures expertise and representation, the following essay merges John Preston's experiences traveling between and cutting tonewood in the two forest

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regions and Jasper Waugh-Quasebarth's building of context from ethnographic work and historical research. In the essay that follows, we present John Preston's personal narrative (demarcated with italics) alongside Waugh-Quasebarth's contextual research and framing.

2. Introducing Tonewood

My interest in wood began at least since my early teens in eighth grade wood shop. Though I had made some violins, a mandolin, and a guitar among a few other instruments prior to my tonewood endeavors, I was only beginning to learn the craft of an instrument maker. I was interested in making a double bass, which requires larges piece of spruce and maple. Some internet research pointed to Romania as a good prospect for the wood. So when a co-worker, having returned from a stint in Kuwait, mentioned he was advised by some contractors under his direction to visit Romania while the country was still transitioning from the communist era. I planned the trip centered around searching for tonewood sources, as it is always nice to travel with an objective. I had no notion of entering the tonewood business at that time.

I am not certain of how long the term "tonewood" has been in use, nor of its origin, but it is casually used today to denote any wood used in musical instrument making. To me, tonewood is wood that has been selected, prepared, and seasoned in a specific manner to render it most acceptable for use in stringed musical instruments. I do not believe a run-of-the-mill board[3]*, regardless of species, that has been quickly dried from "green" to four percent moisture content, dead-stacked in a warehouse and later sold for furniture is "tonewood." Tonewood must be carefully selected from standing trees or logs, carefully evaluated during cutting, air-dried in open outdoor sheds, and stored for some years before use. At each turn the wood is evaluated further for its suitability. The process of cutting tonewood is tedious, fraught with uncertainties, and very labor intensive. Further, perhaps as little as 1 percent of standing spruce or maple have the qualities that could make it for tonewood. Thus, the seemingly exorbitant price for the finished pieces!*

Global flows of forest resources the market for the production and consumption of musical instruments throughout the world. So-called "tonewoods" recognized and prepared for their exceptional sonic qualities flow from global forests through international networks of trade and into the factories and workshops from which finished musical instruments emerge. The violins crafted to

[3] My use of the term "Run of the mill" is simply any random board taken from a sawmill, and not necessarily a reflection of quality.

fit the eager hands of classical students the world over in the factories of Reghin, Romania and the fiddles bowed in the traditional music contests at the Appalachian String Band music festival in Clifftop, West Virginia share a common biography. They are taken from living trees, removed from their cycles of growth and forest entanglements, and made to live again through affective musical tone. Instruments, the tonewood they are made from, and the instrument makers who put them together can be conceptualized as integrated in vast "meshworks" (Ingold 2011) of human and non-human actors entangled in economies, ecologies, and networks of space and agency.

A growing literature in the humanities and social sciences attends to the global extraction and flows of musical tonewood, questioning how global desires for endangered species and trees rooted in affective places (Allen 2012) impacts makers (Dudley 2014), extractive production (Martinez-Reyes 2015), international politics (Libin 1994) and the environments (Silvers 2018) from which these materials emerge. While the international trade of endangered species of trees is frequent topics in these studies, questions of sustainability and the interconnectedness of forest environments also emerge in places where musical instrument-making traditions and the forests grow side by side, such as the Carpathian Mountains of Romania and the Appalachian Mountains of the United States. While international companies, such as the large guitar companies of North America can often create supply chains throughout the world, it is rare to individual makers take it upon themselves to travel to other forest regions and develop relationships around this affective wood. These relationships develop around the collaborative practice of sourcing and learning to cut musical wood, a process this article is testament to.

3. Listening for Tonewood in Transylvania

It was the early advent of internet commence, I suppose, but nevertheless was the mode by which I found the Romanian company, Pana Alba SRL*, and arranged to meet the owners at Biserica Neagră - the Black Church - in Brașov, Romania. I was greeted by Cătălin Murgoci, the company's owner, and Alfonso, his partner from Spain, who expressed the usual warm Romanian hospitality with coffee and conversation to contrast the typical gray winter day of our meeting. They explained that* Pana Alba SRL *was cutting spruce primarily for guitar tops, but also cutting lumber for houses they constructed. Excited at the prospect of finding the wood I was looking for, we drove the twenty or so kilometers to the tonewood "factory" in Râșnov.*

That March the factory was literally full of spruce -- guitar tops, building timbers, scraps, and dust covering every surface. It was a busy place. Cătălin had started in the wood business by exporting a number of lorries of fir to Greece. A computer engineer, bored with the administrative side of that business, he found working with wood exciting, and, not long after those fir exports, he began cutting guitar tops for factories in Spain. He has told me since then that his first year of cutting tonewood was a disaster. Seemingly, cutting spruce into thin boards should be simple, but it is a learned craft. "Reading" a log is so very important to success. The spruce log must have no twist, few resin pockets, evenly spaced grain or grain with a nice progressive widening, uniform color, latewood that is distinct but not wide as compared to the earlywood[4] *- to name the most important. Some of this can be evaluated to a minor degree in the log and the rest awaits in the remainder of the long process of turning a log into a piece of tonewood.*

Learning this process, which I did through apprenticing with John and working with Cătălin and his shop foreman, Mihai Filip, is a process of embodying skill and understanding the relationship of musical craft to the physical properties of the wood. Tonewood cutters must simultaneously navigate the economy of the materials, the visual aesthetic demands of makers and instrument consumers, and, most importantly, the sonic, tonal qualities of the wood. Both Romanian and English use metaphors to describe that successfully cut tonewood should awaken (*lemnul trebuie trezit*) and should sing (*lemnul trebuie cântat*). Attributing human qualities to the tonewood brings about a different attention and appreciation for the materiality of wood, as makers must contend with ethical implications of taking the life of trees to sustain the life of singing musical instruments.

As I recall, there was no maple in the factory on that first visit, and most of the spruce for tonewood was cut for guitar tops. They were not cutting maple at the time -- or at least I did not see any. "Curly" maple is used for the backs and sides for some guitars, and nearly all instruments of the violin and viol family. Also called "tiger striped," "flamed," "figured" or "fiddle-back" maple, curly maple is a genetic aberration that occurs in most maple species. In this wood, the grain grows in waves or ripples showing contrast between the tangential (to the growth rings) section of a "curl" to the radial section giving the appearance of stripes. My presumption is that the curly wood is a visual aesthetic of the wood rather than imparting any specific tonal qualities to the instrument. The most desirable maple on the European continent for tonewood is Acer pseudoplatanus*, which from the Latin translates "false sycamore maple" — thus why some refer to it as "sycamore."*

[4] Earlywood is the first portion of an annular ring and is of lower density and larger cells. Latewood is the denser portion of the annular ring formed later and of slower growth. Often incorrectly called Summer and Winter growth.

*I have heard guesses from foresters as to the occurrence of curly figure in maple from 1 in 100 to 1 in 10,000. My guess is 1 in 100 in the North American red maple (*Acer rubrum*) and less frequent in the "sycamore" maple.*

In pursuit of curly maple, I had another rendezvous scheduled in a nearby town with a tonewood cutter. This fellow indeed had some nice maple; not a lot, but he said he had more. When I returned home and decided to dabble a little in tonewood business, I contacted this cutter via email to arrange for some rough-cut curly maple tonewood. Prior to delivering the wood, he had me wire the money through Western Union, which should have been a red flag. Indeed, in dealing with this fellow, I felt like I was cutting a deal in a black market. Perhaps I was. I learned his use of the word "have" did not mean he necessarily possessed the items, but rather would be capable of getting them. Although, in the long run, I got about what I paid for. From then on, I have solely worked with Cătălin, with whom I have developed a close relationship based on respect and trust.

I returned to Romania and the Pana Alba factory in December of that year. Naively, I asked Cătălin if he could send one thousand curly maple violin backs, necks, and the same number of spruce tops to me. They had cut some maple for factories, but factory specifications for maple are rather loose compared to that required by most violinmakers to whom I would be selling. They began procuring the maple and cutting soon after I left, and I returned again to finalize the order. It was later towards summer when I received a container of wood. I realize now that I was just beginning to learn the intricacies of tonewood production. Over time, I was able to use most of this first shipment, but the pieces that were unusable for tonewood stoked my wood stove!

Different regimes of property rights and protections of Carpathian forests throughout the 19th and 20th centuries have left many larger extant stands of timber from which John and Cătălin could select for tonewood. The pre-socialist forest commons, socialist collectivization, and strict control by state forces through the socialist and post-socialist era contrasts with the large, private landholding and discourses of progress through extraction (Lewis 2017) that characterized Appalachia in the early 20th century. Despite this absence of totalizing extraction in the Carpathians, like Appalachia, forest-related work was also the predominant field of paid labor in early to mid 20th century Romania. Small communities were supported and dominated by the extraction and processing of timber (Dorondel 2016).

Despite different protections and discursive constructions of the forest as communally held or belonging to the people, the diverse ways socialist policy was understood and enacted on the ground resulted in many different kinds of Romanian socialist land tenue (Kideckel 1993). Exploitation in Romanian forests has

taken different routes, with corruption despite strict legal protections being a serious issue. Neoliberal polities stressing the privatization of forest land and free trade in the European Union have contributed to over-exploitation of Romania's forests, including increasing clear-cuts and overharvest despite mandated quotas. While efforts, such as the citizen timber-monitoring app "Inspectorul Padurii," have found some success in curbing illegal timber harvest, poaching and illegal harvest remain an issue, especially for high value trees such as so-called resonant trees. Finding sources of tonewood that has been processed ethically and legally can thus present a challenge as John found out in his search and eventual success for a tonewood partner.

Figure 1 – *John and Cătălin assessing tonewood in Râșnov in April 2018.*

Entwined in the political ecology of the forest is also the symbolic weight placed upon European maple and spruce in the global trade of violin and viol family instruments. Unlike red maple, which is prized for certain American-made instruments, wood most similar to the praised European makers of violin family instruments is preferred by today's global violinmakers. As Romania is amongst the most forested countries in Europe with large stands of "old-growth," Carpathian forests remain a significant source a global market for musical instrument tonewood and can provide a close substitute to the prized trees of the forests of Northern Italy (Allen 2012). As a result, Romanian foresters have monitored and studied the potential economic impact and viability of these tonewood trees (Albu and Dinulică 2014; Dinulică et al. 2015) in ways that are not considered in the United States.

4. Listening for Tonewood in West Virginia

*In 2011, I began cutting local tonewood -- maple and red spruce -- having felt with my experience in Romania I could succeed. There is really little difference in the process whether in the Carpathians or Appalachians. Both require establishing relationships with the foresters (in Romania this requires more drinking of palinca (*moonshine*) than it does here!). It is romantic to think of a tonewood producer walking through a dense spruce forest hitting trees with a mallet to find those possessing a great sustained tone, but in reality, we rely on loggers to bring the trees from the forest and evaluation of the log occurs first in a log landing. I think Stradivari likely did the same, if that much.*

Today, red spruce grows along the higher elevations in southern Appalachia to near sea-level farther north in Maine and Canada. West Virginia once had hundreds of thousands of acres of red spruce, but now red spruce covers about 50,000 acres, as I understand. And it is dwindling more and more every year. In West Virginia, most of the red spruce is in the Monongahela National Forest. The spruce stands are interspersed within the Forest and adjacent to that are in private ownership which are mostly being clear-cut. As red spruce is not deemed valuable, clear cutting allows more "valuable" species such as cherry and oak to regenerate ahead of spruce. We are losing our red spruce stands that could otherwise become tonewood in the future. Its value in West Virginia is for fence rails or pulpwood. Red spruce is highly prized for steel-string acoustic guitars and mandolins, yet only a very small number of cutters are getting red spruce suitable in size for guitar tops. One top of red spruce, which would equate to about one-third of a board foot can bring two hundred dollars or more. Yet, I have never heard of a forest management plan from a large landholding company that recognizes red spruce tonewood.

In West Virginia, where the majority of logging is done on private land, the major regulations primarily exist to protect water quality. Companies exercise great flexibility in cutting trees on their property according to their management plans, often relying on clear-cutting as a method, as long as they do not cause a certain amount of sediment to get into streams and waterways. The systems of sub-contracting and quotas employed by timber companies can leave many disjunctures between workers and work at each stage and complicates how decisions are made regarding trees.

Loggers cut and trim the trees in the forest and transport logs out of the forest on large trucks, a common sight on the region's two-lane roads that link the small municipalities of West Virginia. The trucks are unloaded at large centralized log yards where the size, species, and quality of the tree may determine its future, in accordance with political and economic influences as well as changing tastes and

aesthetics of buyers. The biggest trees are often cut in the forest but can be too large for the infrastructure of sawmills for the milling or pulping operations, which are built to process high volumes of trees. Big trees are also likely to have internal issues such as cracks or rots, so they may be left to rot on the forest floor.

Private landowners and timber firms are often thinking about the short-term gain in hardwood species, also encouraged by the state with cheap property taxes that encourage forest management around the production of revenue. For larger timber companies, quotas are made "in board rooms," according to one forester working in West Virginia. These quotas are dependent on measurements made in board feet of timber for logs, excluding pulpwood, rather than total tonnage. As a result, estimations of production are not a good indication of what is being cut in the forest, so forests are cut at a higher rate than projected, which the forester described as "working ourselves out of jobs."

While I worked in West Virginia, many walnut or ash trees were being shipped immediately as veneer logs for the furniture industry in China due to their high price and the increasing scarcity of the ash, threatened by the emerald ash borer (*Agrilus planipennis*). Smaller trees could be sent to be split as rails, ground for paper pulp, or chipped for mulch or to be turned into charcoal briquettes. Because of this arduous triage, the foresters trained in managing forests are less likely to employ their knowledge of forest ecosystems than their ability to manage sales on log yards. Pressed to sell larger volumes, they are less attentive to niche markets such as tonewood.

4. Connecting Mountain Forests Through Instruments

West Virginians are said to be very hospitable, welcoming, friendly yet reserved people. I find the people of Transylvania the same. They are our kindred folk. And even the food is not too dissimilar from old-time Appalachian cooking: growing up we often had cabbage rolls, and in Romania it is sarmale*, corn grits or* mămăligă*. Even our forests are similar, but our red spruce are comparatively small to those we find in the Carpathians. It is unusual to find a red spruce on private land large enough to get guitar tops*[5] *from it, so American instrument makers have to turn to alternatives such as the European spruce.*

Converse to our red spruce, European spruce (Pieca abies)*, or* molid*, is highly prized locally and its value recognized throughout Transylvania where it grows in*

[5] A spruce of about 22 inches is the minimum diameter to obtain a guitar top, which in finished dimension is 8.5 inches per book-matched half.

relative abundance. I suppose this notoriety is due to the robust string instrument manufacture in Reghin. But I think also because Romania was "closed" for so many years under Ceaușescu, and the stands of spruce were not indiscriminately harvested. Ironically, Romania seems to have much better control even today of its forests than in the United States where private ownership of the land allows for any forest management plan or lack thereof. Forest regulations in the United States are primarily for that of sediment control - mostly establishing road grades and road drainage standards.

The annual rings, frequently a visual clue for the quality of the tonewood, also tell a tree's story. Many of the red spruce we have cut Webster and Pocahontas Counties of West Virginia show the history of exploitation of the forest resource. In these spruces, the rings in the center are extremely tight - perhaps fifty years growth per inch. But rather abruptly in the 1930s the growth immediately changed to perhaps six to eight grain lines per inch. The very small trees in this forest were shaded by the dense canopy of the large trees and thus the initial low growth. When the logging commenced only the larger trees were cut, leaving these little trees to begin to rapidly grow. At least by leaving the small spruce, the forests would regenerate into spruce stands. These rugged mountains were probably the last of the great logging that provided for the rapidly expanding United States of the early 20th Century. I've wondered how many tonewood trees went to Chicago by rail to create buildings there!

Looking into these rings, John and Cătălin have forged a relationship across mountain regions that will continue into the future, as John makes his annual trips to visit Cătălin and the people connected to the factory in Râșnov. Just as we can glimpse into the past of the forests from which they emerge, these tonewoods will also extend into the future as cherished, affective musical instruments. What stories will future growth rings tell about the forests and trees that create these relationships amongst people and their forest environments? Can we communicate the need for mature trees and forests in West Virginia and the importance of preserving trees capable of sustaining musical tone in Transylvania? In other global sites of endangered or undervalued tonewoods, there are models of planting and stewarding tone trees for the sustainability of forests and the craft of instruments simultaneously (Gibson 2019). Despite the unique demands and challenges of these analogous tonewoods in deciduous forests, effects of global processes of production and consumption and the looming threat of climate change to high elevation species will present common challenges for the species in the future. Listening for the song of spruce and maple trees in and beyond their singing qualities may present solutions to reconsider the temporality and materiality of global forests at a time when they are needed most.

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