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## Twelve Hearts of Mississippi

**A**NDREW Colaninno, the district ranger, sat on the edge of his desk facing the press, such as it was -- the TV reporter, his cameraman, and me. Colaninno was a scaled-down version of a big, bearish, bearded type that is common in the Forest Service. He stood about five feet seven, more a yearling black bear than an Alaskan brown bear. His close-cropped beard was somewhat more grizzled, perhaps, than one would expect in a man of forty-three. Colaninno was explaining the formula by

which he had arrived at his \$3.00-a-can tax on worms.

"When we sell timber, we use exactly the same procedure. We say, 'What's the price of lumber FOB at the mill? What's the cost of felling, what's the cost of skidding, what's the cost of transportation?' The price of the timber minus those costs, which is called the stumpage price in forestry, is the basis for the fee charged. We would use that procedure regardless of what we sold -- whether it was deer moss, or palmetto berries, or any other minor product that we might sell off the forest."

I could detect no trace of southern drawl in the ranger's accent. Colaninno was born well above the Mason-Dixon line, in the Bronx, yet I heard no Bronx nasalities either. He spent most of his childhood in southern Florida and his adulthood in national forests across the nation. He spoke in the regionless inflections of a television news anchor.

"What other forest do they do this in -- harvest earthworms?" the reporter asked.

"We're the only one, as far as we know. So you can understand our dilemma. I'm a forester, and I have a degree in silviculture - how trees grow, the ecology of trees. I never had a course in earthworms. Everything I know about earthworms I've learned in the four years I've been in this district. I've learned by working very

closely with earthworm researchers from the University of Georgia. We make an annual pilgrimage up there to Athens and spend three or four days. They share data. It's like an intensive short course in earthworms."

Colaninno gave us an abbreviated version of that short course. We learned that the bait marketed all over the eastern United States in small plastic cups labeled EARTHWORMS is not a single species but many. Some are red worms grown commercially in sawdust or horse manure. Others are night crawlers harvested from the wild in various ways, often by electroshocking. Fishermen generally favor night crawlers over red worms, and they prefer the worms of Apalachicola to anything else that crawls. "The species of worm here is called *Diplocardia mississippiensis*," Colaninno said.

The reporter laughed merrily. "I don't think anybody can get *that* one out on the air," he said.

Colaninno smiled, but I found myself irritated that the worm's scientific name should seem somehow comic, or beyond the reach of a television audience. *Diplocardia mississippiensis* was a noble, euphonious name, in my opinion -- "Twin-heart of Mississippi," if my translation was right.

"Diplocardia would mean two hearts," I said. "Double hearts."

"It means twelve hearts," Colaninno replied. "What it means is they have two hearts per segment. There are six segments that have hearts. The worms are hermaphroditic. They have both sexes on the same worm. They choose their sex based on population dynamics that aren't very well understood right now. We do know that they play an important role in calcium cycling. They have a gland in them, the calciferous gland, that sucks calcium out of the environment. Little nodules of calcium form in this gland and then go to the gizzard and help grind up food. Where chickens eat pebbles as millstones for their gizzards, these guys -- the worms -- make their own pebbles. Their excrement is four or five hundred times richer in calcium than the surrounding soil. That calcium is very important in the ecology of this area, because the soils here are so poor in nutrients."

Earlier, Charles McCranie had asked rhetorically what Colaninno knew about earthworms. As it happened, he knew quite a bit.

"We're trying to get a major study off the ground," Colaninno went on. "A six-year study of red-cockaded woodpeckers that will either confirm or refute a link between woodpecker success and earthworm abundance. Woodpeckers need calcium to make eggs. One hypothesis holds that the availability of calcium in the environment directly influences how many eggs a given

female woodpecker lays. If earthworms fix calcium -- and right now it appears they are the major fixers of calcium here -- then the number of earthworms you have may be directly related to the number of woodpeckers you have."

Colaninno also told us that regulations put in place to implement the National Forest Management Act of 1976 require the Forest Service to safeguard forest resources. "Can you imagine how the baiters would react," Colaninno asked, "if a court order directed me to issue no further permits because we were threatening the viability of the species? They'd be shit out of luck. They could go complain to Congress until they were purple and it wouldn't make a damn bit of difference. We've been working behind the scenes to keep them in business. When you hear rumors that we're trying to drive them *out* of business, that's just crowd talk.

"Unfortunately, we could not go to the earthworm community, badly organized as it is, and say, 'Listen, we've been working for four years, we spent thirty-five thousand dollars of our own money, and we've got an NSF grant for a hundred and fifty thousand, all to keep your industry in business.' We don't have any intention of jeopardizing their livelihood. But we're getting so much pressure to receive a fair return, a businesslike return, on anything that we sell off the national forests that the permit fee is going to have to go up."

"It really is a can of worms," the reporter said.

## Grunt

**A**T six in the morning Charles McCranie's Toyota truck swung off the highway, its headlights illuminating the curtains of my room in the Snowbird Motel, the only inn in Bristol. I climbed into McCranie's cab. We drove to a Bristol convenience store, where McCranie bought soft drinks and ice for his cooler. We waited a few minutes for his nineteen-year-old stepson, Eddie Lee, who was to join us grunting that morning. When Eddie showed up in his own Toyota, we set off in a two-truck convoy for the forest.

"This is good weather for baiting," McCranie told me. "Moist and warm. Seems like there's something about the leading edge of a front. Any other organism -- fish, game, everything -- seems to be real active before a big storm. Bait's the same way. They come up easier and they come up more. Most of us believe a worm is affected by a lot of different things, atmospheric pressure being one of 'em. I'm sure that he is. He's a very sensitive little animal. I mean, he's nothing but tissue. And he's the easiest thing in the world to kill."

We followed Eddie Lee's red taillights down long straightaways through the darkness of the forest. No headlights came

at us from the other direction. We overtook no unknown taillights. The Apalachicola was all ours. We were the early birds after the worms this morning.

"They's a lot to baiting," McCranie said. "It takes a long time to learn a little bit about it. That's why Mr. Colaninno didn't understand, first of all, the kind of people he's dealing with. We're all real independent. We set our own hours. We don't work with a boss. I've worked in the bait business and nothing else for the past five years. My wife and the rest of her family have done it forever. My brother-in-law, Ruben Hill, was the one who first took me out. I love it. I wouldn't do anything else. It's the quiet, and the solitude, and the peace down here. A lot of it is the game -- trying to elude everybody, hide from everybody. It's the hunt. It's the let's-find-the-worm game. It's going to the right place at the right time. Knowing how to hide your track. Knowing how to hide your truck. Because I'm just not gonna be where there's a big crowd. They catch you getting some worms, you know, the blacks, and people from Sopchoppy, and they'll just surround you. If they ever catch you."

We spoke of the demonstration in front of the ranger station, and I reminded McCranie of his performance there. If he wasn't careful, I suggested, he might wind up an organizer. He grimaced but did not seem entirely opposed to the idea. He took a sip of coffee.

"We're gonna have to form some kind of loose confederation and kind of hang together," he said. "And be aware of what's going on in the forestry department, and what's going on in Congress."

Some miles into the forest we left the pavement for a dirt road, left the road for a double tire track across the black ash of a prescribed burn, and finally pioneered a track across the charred ground. It was still dark when McCranie stopped the truck. Dawn showed in the sky, a pale light in the canopy of longleaf pines, but night persisted on the forest floor. So it goes in any forest, of course, but here the lag time was exceptionally long, owing to the carbonization of the burn. The charcoal-blackness of the forest floor swallowed light. It was difficult to make out details. Eddie Lee walked toward us from his truck like Claude Rains in *The Invisible Man*. His jeans were out at the knees, frayed from constant kneeling to grunt, and his white cotton long johns showed through. There was nothing to see of Eddie but cotton kneecaps in motion, aglimmer.

The burn smelled acrid and clean and wonderful. Burned land should smell sad, I thought, but the scent of these flatwoods was pungent and exciting. Maybe this burn smelled "good" from species memory. The torch was one of our earliest tools; the prescribed burn is a prescription as old as humanity. *Homo pyro* we might have called



ourselves.

McCranie took up his iron and selected a couple of stobs from the back of his truck. He generally carries fifteen to twenty stobs into the field. A few of these are new, and being tested. Some stobs prove to be duds, resonating at an ineffectual frequency. A baiter cannot tell bad stobs by ear, but the worms will inform him immediately: they refuse to come up. If some stobs are duds, then others are Stradivariuses, causing the entire audience of worms to rise thrilled from their burrows. The effectiveness of any given stob varies, too, with the firmness and wetness of the soil. For all these reasons McCranie likes to have a wide selection. He took up a flashlight, a bait can, and his iron.

On finding a spot he liked, McCranie drove the first stob in and then knocked in the second alongside it.

Many baiters use a single big stob. McCranie prefers two smaller ones. The pressure of grunting drives a stob slowly down until it is buried too deep to vibrate properly. McCranie has found that two little stobs sink more slowly than a single big one, and thus are easier to knock out when it is time to find a new spot. McCranie knelt and, planting one knee against the nearer stob to firm up its vibration, commenced grunting. Standing about eight feet from the singing stobs, I felt my boots tingle with each grunt. After four or five, worms began appearing. One moment I saw only the

black of the burn, and the next moment the pallid lines of worms were everywhere.

Some distance away Eddie Lee began his grunt. The croaking now resounded in counterpoint -- first McCranie's call, then Eddie's answer. Occasionally came a reversal, a kind of syncopation as Eddie croaked and McCranie answered. In duet the baiters sounded otherworldly, or like very old terrestrial music: a primitive call-and-response from a time when giant salamanders ruled the earth.

The grunting rhythms and phrasings of each baiter in the Apalachicola are unique. Charles McCranie knows his stepson's grunt as well as any mother seal knows the bleat of her pup. He could recognize the iron-on-stob "voice" of his mentor, Ruben Hill, a mile away. He remembers the voices of most of the baiters he has ever crewed with, and their distant croaking will bring a small, involuntary smile. He can still recollect the alien, Wakulla County grunt of a big old Sopchoppy boy, blond and burly, with whom he once nearly came to blows in the woods. The Sopchoppy boy had threatened to shoot him. He has heard that grunt several times since, and it causes his hackles to rise.

On emerging, that morning's worms lay long and straight on the surface. It was as if they found in linearity some relief from the low-frequency waves of the stobs' vibration. They did not curl and twist until McCranie

dropped his iron and we began to pick them up. At the touch of our fingers they came out of their trance and squirmed.

We retrieved all the keepers we could see within a radius of thirty feet from the stob, leaving only baby worms that were too thin for a hook. McCranie knocked his stobs loose, and we walked on, looking for a new spot. By the time he began a second grunt, not five minutes later, day had dawned in an unequivocal way. The longleaf pines were beautiful: their open crowns, sparse and irregular, with long needles in big bunches, stood in silhouette against the pearl gray of the sky.

"Any theories about why the worm comes up?" I asked.

"There's something about that vibration that tickles him," McCranie said. "It rubs him the wrong way. You can tell if you're grunting right. If you're really getting the bait to come up good, that worm will just come spoolin' out of there. That's when you're grunting like you should be."

Charles Darwin, in his book *The Formation of Vegetable Mould Through the Action of Worms, With Observations on Their Habits*, reported a common belief that "when the ground is made to tremble," earthworms think they are being pursued by a mole and leave their burrows. I asked McCranie for his opinion. Could the worms' behavior be an adaptive response to some underground

danger? Was there any vibration in nature that grunting might approximate?

"The rain will beat 'em out of the ground. That's the only thing I can think it would be. And rain doesn't bring 'em up in the numbers that come up when we grunt. I've grunted up some little grubworms and stuff, so there's other things that will respond to that vibration. If I buried you in the sand up to your neck and grunted beside you, chances are you might want to come out. You felt it under your feet just now. You can imagine how it would feel to your whole body. It would give you a little shock."

Daylight had by now clarified the understory. Each longleaf pine was singed a bit at the base of the trunk, but otherwise appeared undamaged. Almost everything else in the forest had been reduced to black ash. Here and there were the blackened, pear-shaped stem tubers of palmettos. The leaf-scars on the tubers were charred. The palmetto fronds were gone, having burned all the way down to the little nubbin that botanists call the hastula -- that center from which the fan of fronds radiates. It was through this inky, blasted, Hiroshima-like landscape that we hunted, stooping, for worms.

"Worm sign," Eddie said, indicating a patch of low white-sand mounds in the black ash. These sand piles, the tailings from worm burrows, were everywhere. Fire had brought

out the pattern, demonstrating the industry and ubiquity of the worm. Darwin noted that in many parts of England more than ten tons of dry earth annually pass through the worms inhabiting a given acre, to be deposited on the surface. This Florida soil was poor and pale, not Darwin's dark and rich Britannic sod, yet excavation on a similar scale seemed to be under way. I rubbed my fingertips together. They were slick with a black plaque formed of the carbon of the burn and the muscilaginuousness of worms. This plaque would prove impervious to soap and water alone, but with a little elbow grease and a washrag it would come right off.

"Walk over here and I'll show you what a sandworm looks like," McCranie called. "See this worm right here? You feel of him. See how he turns just kind of mooshy?"

I picked up the sandworm, which had an unpleasant, mucous flaccidity, slimy and effete.

"When you pick him up, he'll turn kind of milky. Some people call 'em milk worms. Or rotten worms. All kinds of different names. They're zero use commercially."

"They're too soft to stay on the hook," Eddie Lee explained.

"And they won't hold up," McCranie said. "When you get 'em, you can get some big fat ones that look pretty -- but when you put

'em in the can for a while, they just turn to strings -- a stringy bit of nothing. Now shine your light over here, and I'll show you what a real worm feels like. Now feel this worm."

I felt.

"He's hard," McCranie offered.

"He's hard," I agreed. "Hard and firm and muscular."

McCranie liked my appraisal, and he nodded with satisfaction. "That's a real worm," he said. Dropping the real worm into his can, he tossed the sandworm away. "That's a whole nother breed of worm, the sandworm is."

Picking up another real worm, a big one, I admired it for a moment and then held it toward McCranie. "It's an interesting animal," I said. "I mean, you can't say it's a *handsome* animal, but I almost want to say it's a handsome animal."

"Right," McCranie said. He seemed pleased with me. "It's clean. I mean, when you look at your hands, they look filthy, but that little ole worm, he looks clean. And pretty. *Clear!* Like I say, it's an honest way to make a living. It's a very honest way."

### **Continued...**

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Illustrations by Barry Blitt

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