

# ECUADOR: INTO THE FUNGAL JUNGLE

by Larry Evans & Daniel Winkler

What would bring people from places like Rome, New York, Seattle, Washington, and Montana to tropical Ecuador in February? “You mean besides the weather?” asks Bellamie, as we ride our horses down the dirt road between the jungle and the cow pasture. “Seattle is having an epic freezing blizzard. Right now.”

Betsy, who is from Alabama, can’t top that. But she does recognize some of her garden flowers growing like weeds in the ditch. “Begonias? Philodendrons! Bromeliads! Cannas?”

The night of our first day at the

Ecuador Jungle Chocolate Lodge, the nine of us sampled three species of local edibles: The tree ear or monkey ear, *Auricularia*, has three species represented here, we sampled two. They always have the same texture no matter what you do, and a mild flavor. The other sample was the local oyster mushroom, *Pleurotus concavus*, that we were hoping to propagate on local substrates, a tasty and toothsome mushroom but difficult to preserve here in the jungle. Lastly was *Polyporus tenuiculus*, known as the chicken breast mushroom by the local Kichwas. Bland and chewy, it was somewhere between the other two fungi in both texture and flavor.

Chocolate was on everyone’s lips. The surrounding cacao plantations were having a mid season harvest, and the beans were drying by the side of the road, changing from white to brown in just three days. Over 66% of cacao pods are killed by fungi before they ripen. The main pathogen is *Monilia*, a powdery mildew fungus that is spread by insects. One objective of our group was to collect and document any *Cordyceps*-like fungi growing on insects. The first sighting was a squeal by Larry as we hiked in primary rainforest. He was standing by a rotting log. Within minutes we had excavated and photographed the *Ophiocordyceps australis* and its Conga ant prey. Before we had headed far down the trail, Daniel let out a yelp of his own, finding a *Cordyceps militaris*-like specimen on the same log, growing off of a BIG centipede-like carcass. We found five more specimens to everyone’s delight in the following days.

On a rainy Tuesday, we fired up the propane burner and boiled some water to make substrate for oyster mushroom cultivation. Milton and George hacked at *pumba*, the local cana brava grass, with a machete, which we then stuffed into rice sacks and boiled for a spell in a big barrel. After cooling, we inoculated with spawn from a local supplier. We also experimented using wild ginger and palm as substrates for oyster mushrooms and Reishi mushroom spawn.

On February 17, we took off in a canoe down the Napo River to Coca. For hours we traveled through the heart of the upper Amazon until we saw the refinery towers and bridge spans that marked our next stop. For we were bound for Lago Agrio, heart of the petroleum country in Ecuador, and site of one of the world’s most massive and enduring contamination







problems, over 1,000 lagoons of oil, drilling mud, and other toxins that have been seeping into the fragile watersheds for over 35 years. This contamination has caused skin rashes, cancers, and a variety of immune disorder diseases, and death among the local people. Unfortunately, the test site established by the Amazon Mycorenewal Project in 2010 where oyster mushrooms were being used to remediate the oil soaked soils was bulldozed by a local petroleum contractor. This, despite the recent \$18 billion judgment against Chevron

for this, and the subsequent dismissive ruling by a US judge, shows the industry attitude towards remediation efforts. Our host, Donaldo Moncayo, was also on BBC TV that week, showing some of the toxic pools of petroleum that dot the landscape in his home territory.

Returning to the Jungle Chocolate Lodge, we made plans for a night walk in the jungle, where we found an amazing diversity of insects, attracted by George, the Moth Whisperer, and Reba, the butterfly magnet. Soon we all turned into insects ...

attracted to the ghostly beautiful Veiled stinkhorns *Phallus* (formerly *Dictyophora*) *indusiatus* that had just emerged from their eggs and were covered by flies. We kept locating them just by smell and we realized that these Veiled stinkhorns were true creatures of the night, just like most insects in the rain forest. The next morning not much of their glory remained, just a flaccid white mass, its odorous spore load completely cleaned off during the night.

Utilizing local nature preserves, we collected and documented 123 fungal species and several unknowns, most of them saprophytes. Although there were a few familiar northern hemisphere mushrooms, overall the Amazon funga is very distinct from what we were used to back home. The absence of ecto-mycorrhizal fungi was very notable. However, this was more than compensated for by the diversity and colorfulness of the rainforest funga, including all these *Cordyceps* species! Clearly we have to come back to the Amazon for further sampling!

More pictures and details on the January 2012 Bolivia trip at the websites of Daniel Winkler (MushRoaming.com) and Larry Evans (FungalJungal.org). 🍄