

## **Ligaya Lopez and the Bonliso Bean By Jason Thomas**

I used to not think highly of myself. Though it has improved over time, occasionally my inner self-critic comes out from nowhere. I try to remember to silence her: I did a cool thing once. No, a remarkable thing. I guess it wasn't one remarkable thing, but a series of little acts. Or maybe I should credit the plant for those accomplishments? The global community of scientists and hobbyists played a pivotal role as well. Anyways, people credit me for saving an endangered plant species, bringing a carnivorous butterfly back from extinction, and putting a dent in world hunger. I also sparked a new trend that fused home decor with bio-hacking. Reflecting on the 5 years, I should give myself a little grace. After all, I sparked the craze of the bonliso bean, a truly remarkable achievement.

I grew up in a typical farming family on Guimaras, one of the Philippines' 7600 islands. My mom raised me and my older brother James while my dad raised chickens, pigs, rice, mangos, and ube. My dad's mom and my grandmother, Lola, as we call her, lived with us on the farm too. Lola's mother, my great-grandmother, was a fully indigenous woman of the Panay people and as a young adult, my grandmother grew up in between Panay and mainstream cultures. But through the 1960s crazy political upheavals with the Marcos regime, she assimilated more into mainstream westernized Filipino culture. She also fell in love with my granddad, whom I never met.

Lola, an extraordinary woman, played an instrumental role in helping our parents raise James and me. We bonded over traditions, music, language, and folk tales. However, her expertise was the islands' natural histories. She possessed intimate knowledge of her region's diverse ecosystems from the rhythms of the monsoons, to the secret lives of sea creatures, to the enigmatic world of fungi. She knew how to use the stems, leaves, roots, and flowers of medicinal plants, a legacy passed down through generations. She tended a little garden where she grew her favorite flora nestled alongside Dad's hog house. Though Dad interacted with plants daily as a farmer, the medicinal plant knowledge stopped at his generation. For some reason, I wasn't very interested in it either, which I regret.

During one sweltering summer during the COVID-19 pandemic, when I was 9 and James must have been 15, we were walking outside for some fresh air. Dying from our boredom from shelter-in-place, he picked a round leaf off of a random plant he found in a clearing and jeered "Liggy! I dare you to eat this leaf!" The plant was unremarkable; short and herbaceous with round, dark green leaves and small composite yellow flowers. Almost like a daisy. I responded "No, that's weird and gross", but then he yelled, "The Mumu will come to get you!" Our grandmother's stories warned us about the

Mumu, the Filipino boogeyman. I'm not sure what I imagined Mumu looking like, or the exact horror of 'get me' involved. I was young enough, scared enough, and gullible enough to believe him. I didn't know what the herb was and evidently, neither did James.

So of course I placed the leaf in my mouth and started to chew. It tasted terrible but I swallowed it anyway as James laughed at me, and my gullibility. My cries from embarrassment morphed into cries of pain as my stomach burned. I began sweating heavily, losing feeling in my fingers, and feeling dizzy. As James realized the gravity of his prank his laughter was replaced by frantic apologies and desperate prayers. As he carried me half a mile home I remember James was fervently calling our parents for help but got no answer. Once we finally arrived, James frantically called out for help. Lola shuffled over and brushed away damp strands of hair to examine my pale face. She asked James what happened, and he explained he had dared me to eat the flowers of the strange daisy-like species. Lola scrambled as fast as her tiny yet agile body could to her garden and crouched down over her plants, pulling out various roots, stems, and leaves. Both my vision and my memories started to blur. I imagine she ran to the kitchen to wash, crush, and burn them together as she had done dozens of times before. She'd gently guide a spoonful of the concoction into my mouth and had me drink a lot of water. Within a few minutes, I stopped sweating; within a few hours, I regained my vision, but it took days to recover completely.

Fast forward a decade, I was a fairly awkward teenager and felt down pretty often. I had few hobbies, but was into reading and social media. I felt a pang of shame whenever my parents shook their heads when scrutinizing my report card. Still, I did well enough to attend a nearby college on our island of Guimara, offering a bit of hope. Academically, my parents steered me towards the pre-med path, and I was okay with that. My grandma saved my life so I thought life-saving could be interesting. My first year of college was alright, just trying to balance classes and a social life. I did well in chemistry and biology, but honestly, I found anatomy and physiology to be a little boring.

The summer after freshman year was approaching and I needed a job to pay my tuition. I saw a flier at school advertising summer internships at the International Rice Research Institute, or IRRI as it's known. It is near Manila, but a few islands over from Guimara, and I hadn't been so far away from my family for so long. IRRI piqued my interest because they work with scientists and farmers big and small from all over the world to boost rice yields to stop hunger and poverty. I supported their mission to feed the world, plus rice was one of the crops that my dad grew. The long history of imaginative ways IRRI bred and engineered rice especially fascinated me; they genetically modified rice to survive floods and adapt to being underwater. They also made rice grains to have a

golden color packed with vitamin A to prevent blindness. I worked on a few small rice projects with photosynthetic efficiency. My time there made me deeply appreciate humanity's dependence on plants, needing them of course for food but also serving so many other purposes from animal feed, biofuels, materials, fiber, energy, and medicines.

Life was good. My academic growth was on track, I had a captivating research project and a bright future ahead of me as a doctor. However, in the middle of my internship at IRRI, my mom called me to tell me that the doctors diagnosed Lola with a rare and deadly form of dengue. Because I lived far from home, I didn't get to spend much time with her in her final weeks. She passed away a few days into my sophomore year. It was rough. I spent that time dealing with a lot of grief and guilt about being away from her as she was dying and just missing her constantly. With her loss I was thrown into a depression, something I've never completely shaken off. It was hard for me to believe in myself and do daily activities. I started skipping a few classes. The future I felt excitement about lost its luster. It was a terrible start to the school year.

But reflecting on the shortness of life and the path I was heading, something clicked. I questioned why I was pointed toward my current trajectory, unsure if or why I truly wanted to be a medical doctor in the first place. Yes, doctors are of course necessary, keeping us alive and such and I'm grateful for the miracles of modern medicine, but it just wasn't my path. I began doing activities I truly enjoyed, not just what others told me to do. I began to realize the countless possibilities still, in plant biology. I had just spent an amazing summer in IRRI where I learned about plants' far-reaching impact world. And Lola just died. She loved her garden and all the flora of the Philippines. She used plants to save my life, even though plants almost killed me. Maybe plants could have saved her? Plants were the connection to Lola, my great-grandma, and my ancestors before them. I want to major in plant biology.

Lola was proud of me when I told her I would become a doctor, but I could only imagine the sparkle in her eyes if I could tell her my new dreams of studying plants. My parents were a different story, I figured my farmer dad would support me majoring in plant biology. Dad was especially taken aback, he had been pushing for me to do pre-med and move abroad to the US to some prestigious medical school like Harvard or Stanford (he did for my undergrad too). He asked me "Studying plants, like a farmer? You don't want to live like a farmer" I explained to them, "No, studying plants doesn't necessarily mean farming. There is so much about plants I want to learn as a plant science major. And there are careers, look at everyone at IRRI. I'll figure it out." I pushed for it and my parents relented and had to accept me following the path that fulfilled me.

Although the semester started two weeks prior, I switched my classes completely. I enrolled in plant identification, plant physiology, and plant biochemistry courses. I studied hard, which was easy because I was genuinely enjoying my classes. Remarkably, the change wasn't as drastic as I had expected. Despite missing the first two weeks, I earned excellent grades in midterms, proving I could succeed in class. All living organisms, from humans to plants are related. Apparently, until the 1920s, most medical doctors were also botanists. For Lola, they were certainly the same.