

## Stalking the Bamboo Bike

*by Joe Lapp  
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*In an African country with few safari animals, what's to pounce on instead?  
Locally grown two-wheelers.*

The first time I see Craig Calfee, creator of the carbon fiber bicycle and pioneer of the modern bamboo bike movement, he's leaning out of a moving minivan in Ghana, West Africa, trying to get my attention.

His gray curls dance as the van races toward a green left-turn arrow. His right arm waves madly from a torso stretched out of the careening van's side-door window. He's a man committed.

I'd been standing on that corner – with West African practicality called Kaneshie First Light, the first stoplight after Kaneshie market – hoping he'd show. It's not hard for two white guys in Ghana to find each other.

Our meeting is a fluke, though Craig's presence in Accra, Ghana's coastal capital, is no accident. He's checking up on Ghanaian bike builders he trained to make two-wheeled wonders from a plant. Yes, a plant.

Africa. Name it and an American might think: starving babies, stark deserts, dense jungles, rebel groups high on drugs.

The continent doesn't often present itself as a center of innovative design fueling a green revolution. But if Craig Calfee has his way, that's going to change.

Ghana. Name the nation and the American looks thoughtful: here's a country she knows she's heard of, though she couldn't place it on a map.

Think famed West African slave castles. Think the Black Stars soccer team that beat the US in the 2012 World Cup's round of 16. Remember now? Maybe.

For an American, Ghana is an easy place to land: the Lonely Planet's West Africa guidebook calls it "Africa for beginners." Locals are friendly and English is the official language. There's a little tourist infrastructure and a lot of political stability. You won't find many of the big-game animals that Westerners think are everywhere in "Africa," but the relaxed and Rastafarian vibe, breezy beaches, tasty street food, and absence of violence go a long way to make up for this.

It's not a bad place to do business, either. A working port – something you can't take for granted on the continent – brings in plenty of outside goods. Roads are decent. The airport is an international hub. So when you're looking for a stable, bamboo-growing country to establish yourself as a plant-based bicycle humanitarian, Ghana's a good choice.

But wait, who makes bikes out of bamboo? Is pedaling a plant machine even possible?

To a human this sounds loony, but to Craig's dog it made perfect sense. When I finally catch up with Calfee and the minivan at his small bike workshop near Kaneshie First Light, he tells me how, two decades ago in America, his pit bull mix Luna found a piece of bamboo during a fetch-the-stick session.

Craig noticed how light and strong it was. "Hey, I should build a bike out of this stuff!" he thought. He designed an off-the-cuff, this'll-shock-'em model and debuted it at a bike trade show in 1995. The bamboo concept hit the contemporary consciousness and stuck, a publicity stunt gone right.

As it turned out, bamboo is an ideal frame material – light, strong, and naturally shock-absorbing. Though the external components – wheels, pedals, handlebars, seat – are the same as on any other bicycle, it's the beautiful, nature-grown, earth glow frames that give bamboo bikes their aesthetic wow and environmentally conscious aura.

Bamboo bicycles are a hot item on the streets of hipster havens such as Portland, New York City, and San Francisco, proving that Craig's fetch-the-stick idea was no fleeting fad. But Calfee's sweet bamboo inspiration struck his brain far from the dirt paths and potholed roads of tropical Ghana. So what's a cutting edge, green movement, hipster technology doing in the wilds of West Africa? I hit the road to find out.

It's tough to bike tour in Ghana. Drivers drive disrespectfully, roads grow potholes as if they were banana trees, and the heat and humidity are relentless. When the sun hits its 1 o'clock high you'd best be under a grass roofed lean-to sipping a regionally bottled Sprite or your butt is going to be toast.

Then there's exhaust from unregulated vehicles. Overflowing streams and pesky bugs. Not to mention the culinary perils. Refueling at the wrong roadside "chop bar" – eateries featuring a pot of stew over charcoal and a bench under a tree – can leave you squatting in a field, like the locals, with your spandex shorts around your ankles.

Finally, there's *tro-tro* drivers who act like it's their God-given right to do as they please. Their ancient minibuses skew sideways down the road, luggage thrown on top, back doors roped closed over bulging sacks of yams. They've crammed 25 people into a made-for-17 bus onto cushionless seats not properly bolted down. And so even while they're spraying exhaust in your face and running you off the road still you think, "Thank God I'm on a bicycle and not inside of one of those."

I was bravely chasing a rumor of a bamboo bicycle factory in Kumasi, Ghana's second city 160 miles northwest of Accra. Mr. Calfee isn't the only bamboo bike player in Ghana, see. He's got Kwame Sarpong for competition.

Mr. Sarpong is a Ghanaian businessman who wanted to bring jobs to his hometown, Kumasi. During a visit to New York City's Columbia University, he heard that his alma mater's Earth Institute was exploring the production of bamboo bikes in West Africa as a way to extend transportation options for underdeveloped rural communities. All they needed was a local backer. Kwame signed on.

"The thing that attracted me was this idea that the tensile strength of bamboo is higher than that of steel," says Kwame. He was hooked. Bamboo bikes convert people like that.

The resulting business, Bamboo Bikes Limited, built on the work of Columbia professor John Mutter. Mutter had a vision to build, in Africa, basic bamboo bicycles to be sold inexpensively to nonprofits and farmer cooperatives. Pedaled

by rural residents, the bikes could transform lives in backcountry regions where the slow pace of two human feet, often supporting a load of goods carried on the head, is still the primary means of personal and business transport.

Now, armed with nothing but a phone number for Mr. Sarpong and the knowledge that his factory was somewhere on the outskirts of Kumasi, I was biking three days in tropical heat to find the man and his plant-pedaling business.

But first I stopped to meet one of Craig Calfee's local builders.

While Sarpong's Bamboo Bikes Limited factory strives to make a bamboo bicycle that is locally affordable, Calfee's builders make top-quality frames for sale in the United States. Craig is focused on getting his artisans as much return as possible for each frame they make, and that means selling in the higher-priced US market.

Calfee made his name as a bicycle designer when his early carbon fiber frames caught the eye of American cycling great Greg Lemond. Lemond approached Calfee about using his frames in the Tour de France in the early 1990s, and Craig's carbon fiber tinkering suddenly became mainstream. Trading in on the Lemond success, Calfee started his own bike studio, Calfee Design.

A 1980s, college-age wander across Africa had shown Calfee the continent's often stark need for transportation and jobs. He was traveling in search of worldly experience to fuel his art student creations. What he got instead was a latent passion for putting bicycle design to practical, third world use.

When Craig chose bamboo as his next revolutionary frame material, his mind went back to the needs he saw during that 1980s trek.

"Let's see, they do grow bamboo in Africa," Craig remembers thinking, "and they do ride a lot of bicycles." That thought motivated a non-profit, Bamboosero, that gives structure to Craig's bamboo bike efforts on the continent.

Enter Peasah Felix, one of Calfee's bamboo bike makers working in Abompe, a town not far off my pedal route from Accra to Kumasi. Peasah found me at Gentle Spot, the local watering hole. I was tired and sweaty and sucking down the last of two glass-bottled orange Fantas. It was hot. But I dragged myself from the fly-buzzed alcove, got my bike out of the open gutter I had propped it

in, and followed Peasah's bamboo ride over the dirt lanes of the sleepy settlement.

The rudimentary shop Peasah shares with three other bike builders in Abompe is where Craig Calfee's Africa vision meets reality. It doesn't look like much.

Set in a seedy concrete courtyard that also hosts movies and weddings, the "bike shop" portion of the compound is nothing more than a jumbled storeroom of tools and spare parts and a couple wooden tables under a roofed porch. The unsteady tables, wedged in beside crumbling porch columns, hold the diagrams and jigs necessary for bike frame layout. It doesn't seem high tech at all.

But then, I'm surprised to realize as Peasah talks, making a bamboo bicycle isn't necessarily high tech work. Actually, at the start it's more like farming. First step? Go to the bush and harvest some bamboo.

From here it gets a little more mechanized, but not much. Bamboo of the correct size and thickness is dried and treated against insects. The tubes are hand-mitered into bike frame shape then fused to standard bicycle fixtures – bottom bracket, handlebar headset, seat tube – with a sisal fiber wrap soaked in epoxy. A coat of varnish finishes the frame, and it's ready for the wheels, seat, handlebars, and other components that turn it into a useable vehicle. Now, American pavement calls.

Peasah's love affair with pedal-machines started in junior high when he bought three used bicycles and rented them out to villagers, making enough money to keep his own bike well-maintained. He's in teachers' school now in the hill town of Koforidua, about 50 kilometers away. On weekends and holidays he cranks his own bamboo ride between school and home, of course.

Craig Calfee came to Abompe with a bike-building seminar in 2008, Peasah says. Since he already loved bikes, he jumped at the chance to learn how to build one. Fifty-two frames later, Peasah is a bamboo bike expert.

"And what about when you are a teacher, will you still build bicycles?" I ask.

"Yes, I can't stop building bamboo bikes," he says. For most they're a curiosity, but for Peasah bamboo bikes are an addiction.

Thanking Peasah, I hopped on my Trek and pointed my tires into the lowering tropical sun, pedaling once again toward Kumasi and Kwame's bike factory.

By this second day of my three day ride to the famous Ashanti city, the rumored factory had assumed near-mythical proportions in my head. With a brain slightly addled by heat and sun, I imagined it a paradise of beautiful bamboo and modern machinery, where Mr. Sarpong the green revolutionary would ply me with locally bottled, cooled-to-freezing pineapple juice and give me the bamboo bike interview of the century.

But wait – I didn't even know, yet, where my quest's Holy Grail was located. That's right, three days of pedaling in insane sun to reach a destination I didn't even have directions for. Time to find that slip of paper with Kwame's number on it and make my phone call.

When I finally got through to businessman Kwame Sarpong, he said sure, he could meet me next day at the factory. But, as we talked, I realized it was only by sheer luck that he would be anywhere nearby. Mr. Sarpong, see, didn't live in Kumasi. He lived in the same city I called home. I was pedaling 260 kilometers to see someone who lived a 20 minute ride from my house.

With thanks to my lucky angel, the next morning I followed vague directions out to the hamlet of Chirapatre, a one-gas-station town on the edge of the Kumasi suburbs. When I got there I sat in a blue plastic chair at the Grace Filling Station, sniffing petrol fumes and chugging a now-favorite Fanta (cold orange bliss!) out of a can.

A dusty green Mercedes pulled up. It was a factory worker come to escort me to the end of my quest. I would have rather wandered to the place on my own, but when we turned off the main road and started winding a maze of dirt streets, I was happy I had the green car to follow.

Just past a woman selling grilled plantains off a charcoal fire, we came to a compound with high walls, razor wire, and a brown gate. The gate swung open. Finally. I made it.

When I sit down with Mr. Sarpong in his small office, he's as nice as can be to me despite my stained jersey and sweaty sheen. With a gentle smile from over a

dark blue, African print shirt, he spends an hour answering questions when he's clearly got a ton of work to do on this short trip to his hometown.

The place is no paradise, and I don't get offered any chilled-to-perfection pineapple juice. But, I do get a tour of the place.

The main factory workspace, like Peasah's smaller setup, is a relatively simple operation. At one end, a few metalworking and carpentry machines. At another a huge pile of bike wheels. And in the middle a row of 10 jigs where the builders assemble frames.

When I visited, the assembly line was getting rolling after numerous setbacks. But Kwame seemed determined to make his fledgling factory work. He talked of adding more jigs and a night shift – there's a 750-bike order to fill and, he hopes, thousands of bicycles yet to be sold.

He's also trying to start a toothpick business to use up the scrap bamboo. The businessman is as flexible as his materials.

Biking in the San Francisco Bay area in northern California in March is the opposite of biking in Ghana, any time of the year.

For starters, it's cold. Renting a road bike for a few days of riding from Silicon Valley's enclaves into the Stanford-area hills, I have to borrow a set of long-fingered gloves. I'm disoriented because there are no hawkers to dodge as they sell everything from plantain chips to tummy exercisers between lines of traffic. And I don't feel very special at all – for once I'm not the only white person in sight.

What's more, there's whole forests of trees passing by as I crank the pedals around and around, since the local population hasn't cut them all down to make cooking charcoal. And, wow, actual bike lanes.

Craig's Calfee Design bicycle workshop on the California coast is nothing like his tiny Bamboosero shed in Accra's dusty Kaneshie district, either. Set in a tinkerer's warehouse among strawberry fields, you can hear waves crashing in while you play lunchtime soccer on the nearby grass airstrip.

When I walk into the hangar-like space for a follow-up to our Ghana encounter, Craig is sitting on the floor, cross-legged, absorbed in shoehorning an electric gear shift mechanism into a latest-generation Specialized S-Works road frame. Though I've called ahead to make an 'appointment,' when Craig looks up, he doesn't recognize me. I guess two white men meeting in Africa no longer deserves Stanley-and-Livingstone-style historical memory.

Craig shows off some of his toys. On a balcony above cavernous workspace there's a bike in Day-Glo colors, Lemond's first Calfee frame. Down on the factory floor is a ready-to-ride carbon fiber number so light I lift it off the rack with my little finger. And, with pride of place near the front door, find a Calfee-crafted \$8,000, can't-top-this, made-in-America bamboo road ride.

"This is probably one of the nicest and most expensive bamboo bikes in the world," Craig says. And from him, somehow it doesn't sound like bragging.

But I'm there for the \$800 cargo bike in the back. It's Craig's "Africa bike." He started out in Ghana hoping to make bamboo bikes in Africa, for Africans, but found the machines he designed too expensive for locals to buy. Though he's since switched to the export model, he still dreams of a Bamboosero bike that stays on the continent.

A born tinkerer, Calfee has been trying to perfect this, his ultimate humanitarian concept, for years. The current version, which he'd love to start manufacturing in Ghana, has an elongated bamboo frame with an integral rear rack. There's a pressed-wood chain guard, a kickstand, a parking brake. Huge, flat-resistant tires for Africa's miles of rural terrain. An internal-gear hub that "basically needs no maintenance ever." Cruiser-style handlebars to help carry lengthy cargo like rebar, metal pipes, or rolled-up corrugated roofing – all things I've seen transported on bikes in Africa.

Because, in most African countries, having a bike is all about carrying cargo. In the Congo, bicycles become little more than wheelbarrows to cart goods across jungle walking paths. In Burundi daredevil transporters speed down mountains on ancient, tank-like roadsters, bunches of bananas piled higher than the riders' heads on rear racks welded out of rebar. In Rwanda and elsewhere, bicycles serve as taxis – just sit sidesaddle on the rear rack and hold on.

In these still-developing areas, the bicycle is the local version of the automobile. No one can afford a car; few can even buy a bike. So, building a better bicycle



and getting it under African feet means helping the continent out of poverty. Here, transport empowerment equals economic empowerment.

There's a lot to recommend Ghana as a new mecca for bamboo bikes. Bamboo grows in abundance and isn't hard to manage sustainably. Labor costs are low. Transportation and export/import infrastructure are, at least for still-developing West Africa, pretty good.

And there's a clear need, both for the income that results from the making of bicycles and for the transportation boost that access to a two-wheeler can bring to students, farmers, traders, and other workers in rural and urban areas of the continent.

There's some challenges, too. Importing parts is costly and time-consuming. Ghana's business and commercial culture isn't exactly full-speed-ahead and takes a long time to absorb new products. With the local *laissez-faire* approach to standards, ensuring a quality product is a full-time headache.

But whenever a home-grown bike enthusiast like Peasah or a risk-taking businessman like Kwame Sarpong cross paths with a visionary like Craig Calfee, bicycle dreams will grow and flourish. Bamboo is *the* bike action in Ghana, and it's likely to stay that way for a long time.

It's no big game, but stalking the bamboo bike in Africa is a lot of environmentally-friendly, and potentially poverty-changing, fun.