FARMING CRICKETS

We return to Jaramogi Oginga Odinga University of Science and Technology (JOOUST, p.102) to learn about and see Monica's work on cricket farming.

'Crickets are not so traditional to eat in Kenya, compared with termites (pp.120–124), lake flies (pp.134–138) or black ants,' says Monica. 'In Kisii, for example, it is believed that witches keep crickets. So I joke about that with them, when I show them how. I try to let them know it's OK.

'I will also say that I am not an entomologist!' she adds with an honest smile. 'My background is in consumer science and social work.'

'So how did you come into working with insects for food?' I ask her.

'Well, I used to work on the coast, on coconut production and insect pest control. There were beetle larvae that would live in the palm fronds, and they would just spray them, even though they were actually food. On the coast, there are some people who eat one species of a beetle larvae that lives in cow dung. But they do not eat the palm beetle larvae. It is not part of their tribal identity. So I started noticing these patterns there.

'Though it probably goes back to when I was a child, and we would chase crickets for fun. When we caught one, we would roast it for play. And that is common I think, for children to catch and eat insects.

'And now I raise crickets and teach others how to do it too,' Monica says with a laugh. 'We have tried it with different species. *Gryllus assimilis* takes so long to rear, and *Gryllus bimaculatus* tastes horrible! So we are mainly working with *Acheta domesticus*, the common house cricket. It is popular to rear in other places too, like in Thailand and Europe.

'We also tried to raise these,' she says, pulling a giant cricket out of a bag from the freezer. It is the biggest cricket I have ever seen – at least as large as my thumb. 'These are plump and sweet! We all love it. The genus is called Brachytrupes.'

'That's a proper meal right there!' exclaims Ben.

'And they are a pest – they dig big holes in my garden,' says Jackline.

'Now that you could put on a stick and roast,' I suggest to Monica with a smile.

'Yes – this one you can stick on a skewer!' she replies. 'We had high hopes for it, but even with our singing and dancing, it refused to survive in our cage.'

'The person who can figure it out will make millions,' muses Ben.

'Oh, yes – whoever figures out how to rear this one will be a millionaire, overnight,' she says thoughtfully, and falls silent. I watch Jackline look past Monica into Andreas' camera; her face, almost inscrutable, shows glints of something melancholy. 'They will be a millionaire,' Monica repeats slowly, the giant cricket yielding a film of frost as it thaws in her cupped palm.

Monica and Jackline lead us out of their laboratory into the shaded colonnades of the university buildings. Students hurry past in all directions. We pass a gate, cross a red-dirt road and head for an unassuming shed nestled among trees and bushes. 'Here is where we rear our crickets for our research,' says Monica, as she unlocks the door.

Inside it is humid and warm. 'We try to keep them at a consistent 36°C (96.8°F), with ideally 65 per cent relative humidity,' says Monica. 'They need fresh water and fresh vegetables every two days. We give them two petri dishes: one with water for drinking, with rocks so they do not drown, and one with damp cotton for the females to lay their eggs. For feed, we use outer cabbage leaves and chicken feed. Starting next year, we also have funding from DANIDA (Denmark's Ministry of Foreign Affairs), and part of the work is research on feed for the crickets. In the future, we would also like to see if feeding them different things – leeks, sweet pepper, etc. – can give different tastes.'

'And are you also looking into them for animal feed, or primarily for human consumption?' Ben asks.

'Right now we are looking solely into human food, which is our main concern here in Kenya. And it is not just about protein and macronutrients. Zinc, selenium and other minerals are all found in certain insects. And micronutrient

CLOCKWISE FROM LEFT: 1. A giant tobacco cricket **2.** Colourful finger millet **3.** Jacaranda trees **4.** Purple blossom carpet the earth

THE WHOLE HIVE

Serves 4

PROPOLIS TINCTURE
200 g 60% ethanol
20 g propolis powder

HONEY KOMBUCHA
1 kg water
50 g honey (any kind, as desired)
100 g live kombucha (from a previous batch)

BEESWAX ICE CREAM
70 g beeswax
400 g double (heavy) cow's cream (38% fat)
255 g whole (full-fat) cow's milk (3.5% fat)
200 g cow's milk yogurt
3 g guar gum
1.3 g salt
93 g trimoline

One of our researchers, Guillemette Barthouil, was the mastermind behind this dish, made for the Pestival event at the Wellcome Collection in London in 2013. Her concept was to develop a dessert based on all the elements of the beehive beyond honey: propolis, beeswax, bee bread and some blossoms. The only thing we didn't manage to incorporate this time was royal jelly – our next challenge…

PROPOLIS TINCTURE

Put the ingredients into a sealed container and let infuse for at least 1 week. Strain and store in an atomizer.

HONEY KOMBUCHA

Put all the ingredients for the honey kombucha into a large jar and mix together until the honey is dissolved. Cover the opening with a clean cloth, tie with string and leave at room temperature for 4–5 days to ferment. Taste the mixture every day until the desired balance of sourness and sweetness has been reached, then refrigerate to make sure the mixture doesn't keep fermenting.

BEESWAX ICE CREAM

Freeze 20 g of the beeswax, grind it in a Thermomix and mix with 50 g of the cream. Leave in a refrigerator at 4°C/39°F for 18 hours (the cold infusion, for the fragrant, waxy top notes).

The next day, freeze the remaining beeswax, grind it in the Thermomix and mix with the remaining 350 g of the cream. Seal the mixture in a vacuum bag on full seal, and keep it in an immersion circulator or water bath at 80°C/176°F for 1 hour (the hot infusion, for the deep, structured mouthfeel).

Meanwhile, put the cold infusion into a 250-micron Superbag and squeeze it over a bowl to pass. Set aside 30 g of the cold-infused cream.

Mix the milk, yogurt, guar gum and salt in a large bowl. Put the trimoline into a small saucepan and melt over low heat (it should not become hot, just liquid). Remove from the heat, add to the milk mixture and stir to combine.

When the hot infusion is done, place it in the freezer or a blast chiller until the cream reaches 37°C/98.6°F. The beeswax should solidify into a block – discard it and pass the rest of the cream through a Superbag. Weigh 270 g of the hot-infused cream, add the reserved 30 g cold-infused cream, mix with the other ingredients in a Paco container, blend in the Pacojet then freeze in a freezer. When it is frozen thoroughly, blend it again in the Pacojet.

HONEY KOMBUCHA SAUCE
190 g honey kombucha (made earlier)
10 g bee bread
1.2 g agar agar

HONEY CRISPS
100 g crumiel

TO FINISH
crumiel, to sprinkle
4 chambers bee bread
4 cherry or apple blossoms and sepals

Recipe image p.226

HONEY KOMBUCHA SAUCE

Put the honey kombucha and bee bread into a bowl and stir together to combine. Infuse in a refrigerator at 4°C/39°F for 18 hours, stirring occasionally. Don't stir for the last 2 hours, so the bee bread sediments remain at the bottom. Decant the liquid through a Superbag into a pan. Add the agar and mix thoroughly. Bring to a boil, hold for 30 seconds, then remove from the heat and let cool until it sets. Put the mixture into a Thermomix and blitz until smooth, then pour into a squeeze bottle and set aside.

HONEY CRISPS

To reproduce the hexagonal beeswax shape, we made our own moulds by pressing beeswax into silicone. Preheat the oven to 150°C/300°F. Dust a thin layer of crumiel on the moulds, then put them into the oven for 3 minutes. Remove from the oven, press beneath a silicone sheet and return to the oven for 30 seconds. Remove from the oven, wait until the caramel has reached body temperature (37°C/98.6°F) and peel the crisps carefully from the moulds. Just before serving, spray with some of the propolis tincture.

TO FINISH

Chill the serving plates. Sprinkle a little of the crumiel just off-centre on each plate. Make a rocher (one-handed quenelle) of the beeswax ice cream and spoon onto the crumiel. Squeeze a small amount of the honey kombucha sauce near one end of the rocher. Place a honey crisp upright, nestled between the ice cream and the sauce. Finish the plate with a sprinkle of crumiel, broken pieces of bee bread and cherry or apple blossom petals and sepals.

—Written by Josh Evans with Guillemette Barthouil

The Whole Hive

Rhubarb and Roseroot