The Insectivore’s Dilemma

If the West was to start eating bugs, many of the world’s problems could be solved overnight. Professor Charles Spence believes high gastronomy holds the key to making entomophagy socially acceptable.

by Tom Loder Wilkinson

In France, escargots (land snails) are a delicacy. In Mexico, spicy grasshopper chapulines are frequently found on the menu. And yet, for much of the West, the idea of eating insects is akin to the punishments doled out on *I’m a Celebrity... Get Me Out of Here!*, where contestants are forced to consume cockroaches to stay in the game.

There’s no doubt about it, most Western people are revolted by the idea of entomophagy. This has never happened before. But in the future, insect consumption will not only become more expensive (a predicted 18–26 percent between now and 2025) but the ethical and environmental implications of meat consumption will increase along with the world’s population. According to the United Nations’ Food and Agriculture Organization, insects are the sustainable food source of the future. For example, crickets need six times less feed than cattle, four times less than sheep, and twice less than pigs to produce the same amount of protein. Besides, they can be fed organic waste. But despite efforts to re-educate their palate, the Western mainstream continues to find the idea of eating insects loathsome.

This is irrational. Entomophagy is prevalent in around 80 percent of the world’s countries, according to Dutch entomologist Marcel Dicke, particularly in South and East Asia and several African, South and Central American countries. Among the most popular edible species are grasshoppers, waxy grubs, locusts, dung beetles, bamboo beetles, weaver ants, honeybees (including the brood, eggs, larvae, and pupae), wasps, termites, crickets, and cicadas. Dicke and his peers have tried and failed to get the Western public to accept insects as a cheap, sustainable, low-fat, safe source of protein that can be prepared in delicious ways.

Now Charles Spence, professor of experimental psychology at Oxford University and founder of a cross-modal research laboratory, is taking a different tack. Part of the problem is, he says, that Western people living in cities associate creepy crawlers as vectors for disease, dirt and contagion. But even if insects were sold as ‘organic’ or ‘farmed,’ Westerners would still feel squeamish. As Spence puts it, when it comes to food, ‘rational’ nervously prevails.

“Rational instructions have been shown to be insufficient to change people’s behaviours, for instance, to make consumers eat less salt, less fat, or foods containing less sugar,” explains Spence, who is known for providing multi-sensory research to Heston Blumenthal at The Fat Duck and Ferran Adrià’s kitchen in Spain. “If the revolution felt toward bugs is a form of acquired disgust, then the way to introduce insects into the Western diet will likely come from sensory, rather than rational, strategies,” he adds.

Spence believes the key is to target the ‘early adopters’ – society’s experimental culinary elite – who like being surprised by what turns up on their plate. His prognosis pivots on the Michelin-starred restaurants that serve ‘off-the-plate’ during experiences; and ‘molecular cuisine,’ a hallmark of which is to make dishes look unlike the food they are made from.

“Making lesser-known foods – such as insects – into realistic food sources will be best met if researchers team up with chefs and experts in gastronomic science,” he says. Several culinary research teams have already started to tackle the challenge by introducing insects onto their menu. Danish double Michelin-star restaurant Noma ‘popped up’ at Claridge’s hotel in London while the UK was hosting the 2012 Summer Olympics, serving live ants and crème fraîche. In 2013, a two-night culinary
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event 'Who's the Pest', was organised by the Nordic Food Lab, Festivaal and the Wellcome Collection in London. At the latter event, the audience was served delicacies including French mousseline containing wax moth larvae with morel mushrooms, butternut roasted crickets and an anti-infused gin cocktail.

Meanwhile, French chocolatier Sylvain Musquar recently started producing mealworm chocolates topped with crickets coated in edible gold dust. In an interview he admitted that the crickets and mealworms needed a little "make-up... to make them a bit sexy" in the form of gold dust. "It makes them a bit more appetising and it covers the natural brown colour of the insects that might put people off," he added.

"These attempts provide insights into how to make eating insects acceptable," says Spence. "The techniques used in high gastronomy and validated by experiments represent a wonderful opportunity to overcome background negative attitudes, and to try to work with those sensory properties that are associated with the consumption of insects that would turn them into the promising source of nutrition that they can be. It reduces the idea that insects are socially inappropriate and puts them, on the contrary, at the centre of cultural culinary practice."

Chef Josef Youssef is the ultimate gastronome. An alumni of the world's most-respected chefs he worked with Heinz Blumenthal at the Fat Duck and Helena Darruce at The Connaught. In 2011 he decided to set up Kitchen Theory, a website aimed at sharing knowledge in the field of gastronomy, covering topics such as food science, food culture, food history, multi-sensory flavour perception, neurogastroonomy and molecular gastronomy, which has now evolved into experimental dinners, workshops, and guest talks. He successfully introduced insects to a group of diners and intends to create menus using bugs. Here he explains how he did it.

"Our approach to introducing insects to diners was by using the word and taking an educational approach. We screened a short video that highlighted the environmental, economic and health benefits of eating insects before serving any dishes that contained insects. The insects were not presented in their full form, but rather ground down and consolized to highlight the nutty flavour and eliminate any visual grossness. On one course, we placed a full grasshopper on the plate because, interestingly, diners said they wanted to see a full insect somewhere!

"Diners were asked to opt-in or out of insects before the meal. The opt in rate was at about 75 percent, however this number jumped up to about 90 percent on the right night once diners realized the benefits and that plates were not stacked with "creepy critters". Each course was served and introduced with a story, a fact, a piece of history or mythology.

"We try to get diners to make more sustainable and healthy food choices through education and sensory experiences. On our last menu, jellyfish was highlighted as a sustainable food that has a neutral flavour, crunchy consistancy and is a flavour carrier and everyone loved it. Insects will most probably reappear on some future dishes."
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Sample menu from Festiva 13, created by Nordic Food Lab

**Anty-Gin and Tonic**
Bespoke gin of wood ants (Formica rufa) and botanicals with carmine and tonic with The Cambridge Distillery.

**Chimp Stick**
Liqueur root with seeds, fruits, herbs and ants (Formica rufa and Lasius fuliginosus)

**Moth Mousse**
Wax moth larva mousseline (Galleria mellonella) and morels

**Cricket Broth**
House cricket broth (Acheta domestica) with greganopun geum (Locusta migratoria)

**Wormhole**
Oatmealworm stout (Tenebrio molitor) with Sen Craft Brewery

**Roasted Locust**
Butter-roasted desert locust (Schistocerca gregaria) with wild garlic and art emulsion (Formica rufa)

**Bee Brood**
Honeycomb comb (Apis mellifera)

**The Whole Hive**
Beeswax ice cream, honey kombucha sauce, "bee bread", propolis tincture and crisp honey

If it's true that we eat with our eyes, plating insects in a sophisticated way may go some way to helping convince the West to eat bugs. But taste accounts for something too. According to bug-munching blogger, Girl Meets Bug, insects taste like anything from bacon to nutty mushrooms to mushy-soaked-in-beet. Some of the world's top chefs say they are interested in entomophagy but can't get around the fact that bugs taste gross. Dee Opopowsky, executive chef of the Mandarin Oriental Hong Kong, says he is "keeping an eye on the trend" but so far, has no plans to incorporate insect products onto the menu. "It was the taste that was not up to standard," he explains. "However, the team will keep an eye on it as there is reason for this to be important in the future when speaking about sustainability. New products come on the market regularly and there may be a good fit."

As well as the taste, bugs have an inescapably buggy texture. "Like eating sandy marshmallows," describes Australia's top-rated chef Shannon Olsen, of witchetty grubs. The crickets were better he says, because they were cooked in a Mexican spice mix, "but the texture was crunchy and it still felt — and sounded — like eating bugs."