

ON THE CONTRARY **Tony Delamothe**

Slip an extra locust on the barbie?

More than half the world already eats insects; why not everyone?

Following in the footsteps of John the Baptist, I've eaten honeyed locusts, although in my case from a tin. I've sucked formic acid directly from the abdomens of green ants (quite lemony in flavour). And I've devoured sorrel leaves with a paste made of crickets at Noma, a Copenhagen restaurant.

Far from such gastronomic exhibitionism setting me apart from the rest of humanity, it places me firmly with the majority. According to Dutch entomologist Marcel Dicke, more than half the world's population consumes insects—not out of necessity, but because they regard them as delicacies. Dicke was on hand at “Exploring the Deliciousness of Insects,” an evening organised by the Wellcome Collection, London. While he provided the theory, the Nordic Food Lab, set up by Noma's founders, provided the practice.

Dicke's message was that insects are nutritionally rich and low in production resource, which matters in a world where the population is steadily increasing, people are eating more meat, and 70% of agricultural land is being used for grazing. Traditional supplies of animal protein soon won't be able to keep up with demand. Could insects be the answer?

In an update of his 2010 TED talk,¹ Dicke says of the planet's six million species of insects about 2000 are eaten. We already consume insect products: crab sticks and Campari depend for their colour on cochineal, derived from insects that live off cacti. But it's time we moved on to the insects themselves, Dicke believes, reeling off the advantages.

Firstly, insects are far enough away from us genetically that we're unlikely to acquire their diseases by eating them—a risk with eating mammals such as pigs and cows. Secondly, there's the favourable conversion factor: 10 kg of feed yields only 1 kg of beef compared with 7 kg of locust. With cows, much of the remaining 9 kg is manure. By comparison, insects produce less manure, carbon dioxide,

other greenhouse gases, and ammonia en route to making protein.²

And insect meat is apparently of good quality. Protein, fats, vitamins, and minerals obtainable from mealworms are comparable with those from beef. One kilogram of grasshoppers contains the same amount of calories as 10 hot dogs, or six Big Macs. A couple of crickets contain as much calcium as a glass of milk, and so on. I haven't been able to check these claims: let's hope the next edition of McCance and Widdowson's *Composition of Foods* casts its net a little wider than before.

Clearly, it's Western attitudes to insect eating that need shifting, which was what the Nordic Food Lab was trying to achieve with its tasting menu. The lab described its goal as “post-gimmick entomophagy,” citing the scorpion lollipop as an example of what it was trying to avoid. While not entirely escaping the charge of gimmickry, the organisers had nevertheless thought hard about not scaring off the timid with “a big insect to chomp down on” early in the proceedings.

In the generous sized aperitif, Anty-Gin and Tonic, wood ants had been distilled into invisibility. For the first course, two species of ants were visible on chimp sticks (modelled on those used by Jane Goodall's chimpanzees to hoick termites from their homes). The ants' distinctive citrusy flavours had to work hard against liquorice root, flax seed, buckwheat, raspberries, and coriander cress.

The next dish was described as “a bit more classical”: a mousseline of wax moth larvae with morels, swimming in a thick sauce of fermented grains. And then came the big insects to chomp down on: butter roasted desert locusts served with a wild garlic and ant emulsion. This was paired with a house cricket broth and grasshopper garum, which tasted how you imagine boiled up windscreen scrapings might taste. To wash this down was oatmealworm stout (brewed from oatmeal and



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mealworms). Uncontentious icecream, decked out with every bee product you knew and several you didn't, ended the meal.

For the boffins from the food lab, the problem was not creating the menu but sourcing the ingredients—just as it is for top flight restaurants. Whisper it softly, but pet shops and zoos may have been roped in to help feed the five dozen at the Wellcome. The problem of scarcity is ironic given that there are between 200 and 2000 kg of insect per person on the planet. It's also likely to be a substantial barrier to further uptake in the West.

When it comes to supply, the Netherlands is furthest ahead, with one entrepreneur selling migratory locusts, mealworms, and buffalo worms in supermarkets (although freeze drying plays havoc with insect fats). The Netherlands is ahead in other ways, too, as Dicke was proud to report. The Dutch agriculture minister has put insects on the menu at her ministry's restaurant and taken her European Union counterparts out to a dinner of insects. Dicke showed a picture of Crown Princess (now Queen) Máxima, looking delighted to be presented with the first copy of Dicke's *Het Insectenkookboek* (English translation due later this year).

The idea of insect cookbooks may seem faddish and new, but Englishman Vincent M Holt got there a long time ago with his 1885 classic, *Why Not Eat Insects?* “I am confident,” wrote Holt, “that on finding out how good they are we shall some day right gladly cook and eat them.”

Apparently, the Victorians were partial to chocolate dipped ants, so we seem to have gone backwards since Holt's day. Maybe we'll only be driven to shed our inhibitions by necessity. And that may not be a long time coming.

Processionary moth soufflé, anyone?

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YANKEE DOODLING Douglas Kamerow

Big Tobacco lights up e-cigarettes

Is this good or bad news for public health?

E-cigarettes, more formally electronic nicotine delivery systems, were introduced in 2007 but remain a relatively tiny market. In the United States they accounted for about \$500m (£330m) in sales last year, perhaps 0.5% of tobacco receipts.¹

That is changing. The tobacco company Lorillard purchased the leading e-cigarette maker Blu last year. Reynolds American is expanding marketing of its Vuse e-cigarettes; and Altria, the largest US tobacco company, has announced that it will enter the e-cigarette market later this year with its own product.¹ Marlboro e-cigarettes, anyone? The game is on.

This, of course, has public health advocates terrified. Just when we had Big Tobacco on the run, with US sales falling 3-4% a year, along comes a new product that may save them—as well as maintain the nicotine addiction that they depend on for sales. In fact, tobacco industry sales were down more than 6% last year, due in no small part to the increase in e-cigarette sales. Hence the recent acquisitions and announcements.¹

Let us count the ways that e-cigarettes are upsetting. First and foremost, they are increasingly available and cheap. You can buy them, singly or in packets, in many US convenience stores for about half the price of conventional cigarettes. They are flavoured, leading to fears that they will attract younger, first time smokers, or “vapers,” as they call themselves (because the “smoke” is actually vaporised liquid nicotine solution). They have a high tech image: rechargeable cigarettes with batteries, what could be more desirable? They are not as offensive to others as tobacco cigarettes: their vapour doesn't smell bad, it produces no ash, and they don't give you bad breath. They are being promoted on cable TV and the web (see examples on YouTube at <http://bit.ly/19799LC> and <http://bit.ly/10phvaU>) by sexy movie and rock stars, who urge

us to “take our freedom back.” Further, we don't really know what is in e-cigarette cartridges; some manufacturers list ingredients, others don't. Studies measuring the content of the cartridges have found varying nicotine levels as well as unlisted, dangerous ingredients.^{2 3}

What permits most of the above is that in the US e-cigarettes are almost completely unregulated and untaxed. The US Food and Drug Administration tried and failed to classify them as drug delivery devices, which it could regulate. Now the FDA says that it will regulate e-cigarettes as tobacco products, but it has already missed one deadline for announcing these rules and recently opined that “further research is needed” before it proposes regulations.¹ Meanwhile, stiff taxation, a potent weapon against conventional cigarettes, barely applies to e-cigarettes. Only one state currently taxes e-cigarettes, and there is no federal excise tax on them at all.

Many of the ways smokers use e-cigarettes are worrisome. Some people use them as a substitute for tobacco cigarettes when they need nicotine but can't smoke because they are at work, at a bar, or at home with objecting family members. E-cigarettes thus help maintain the smoking habit and reduce incentives to quit. Others use them as a way to cut down but revert to tobacco cigarettes on finding them unsatisfactory. Younger vapers start smoking with e-cigarettes, lured by the movie star adverts, implied safety, flavoured choices, and permissibility of use anytime and anywhere.

But we can envisage helpful uses for e-cigarettes too, generally as smoking cessation aids. Although it is strictly forbidden to advertise such uses (which would immediately put them under FDA jurisdiction), the e-cigarette companies subtly imply such a use for their products. Pilot studies have started to appear that use e-cigarettes in smoking



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● Feature: Electronic cigarettes: medical device or consumer product? (*BMJ* 2012;345:e6417)

● Editorial: Electronic cigarettes as a method of tobacco control (*BMJ* 2011;343:d6269)

● Personal View: Electronic cigarettes: miracle or menace? (*BMJ* 2010;340:c311)

cessation efforts, and doubtless full clinical trials are to come.

Finally, as with the extended use of other nicotine replacement products, which is discouraged but clearly better than resuming smoking, even we public health nuts have to admit that if you're going to smoke it is probably a lot better to be a vaper than a tobacco smoker. If the content of the nicotine cartridges is regulated and under FDA control, I'd much rather put relatively pure nicotine into my lungs than the mix of ingredients found in burned tobacco. Further, if they are produced by a regulated industry, which has deep pockets and understands the consequences of running afoul of (yet to come) regulation, you can hope that what you get is what's on the ingredient list.

Which is why I asked the question at the outset whether it is a good or a bad thing that the major tobacco companies are jumping into the e-cigarette market. It seems to me that the best possible outcome at this point is for the FDA to regulate the crap out of e-cigarettes—in both senses of that coarse construction: regulate them heavily, and get the poisons, flavourings, and everything but nicotine out of them.

Meanwhile, television advertising should be banned, age and availability restrictions enforced, and e-cigarettes heavily taxed, at levels similar to those for tobacco products. And we desperately need clinical trials and observational studies to learn more about how e-cigarettes are being used and whether they are helpful in smoking cessation efforts.

Now that the vapour is fully out of the cartridge, we're not going to be able to get it back in. We need to make the best of a bad situation before it gets worse.

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MEDICINE AND THE MEDIA

Profits from pregnancy

The NHS and some UK royal colleges profit by selling commercial advertisers access to pregnant women through promotions such as Bounty bags. These potential conflicts of interests are unacceptable, considers **Margaret McCartney**

Bagsful of freebies are given to expectant parents from companies keen to promote their products—nappy creams, vouchers for photos, washing powder samples, and “special offers” to buy bibs, workout books, and buggies. What’s wrong with that?

The point is that the UK National Health Service, Royal College of General Practitioners, Royal College of Obstetricians and Gynaecologists, and government have embedded commercial advertising into routine contact with pregnant women during antenatal and postnatal care.

The RCOG is setting up *Baby and You* magazine, which it plans to give for free to pregnant women. Mark Green, managing director of the commercial company Bednest, which sells bedside cribs for newborn babies, was contacted by a sales representative from B+Y Publishing, using the RCOG logo, which offered a “guaranteed minimum” audience of 500 000 parents through “their Obstetrician/midwife ... the most trusted and influential person throughout this entire time.”

The representative offered Green an “educational/advertorial piece, presenting you as a thought leader, as well as a trusted solution provider.” The package, costing £15 000 (£17 500; \$22 500) for six months, included an “up to date database of 100 000 families.”

Green, horrified at how easy it seemed to pay for influence, contacted the RCOG. The college is investigating and told the *BMJ*, “If such practice is happening, it is unacceptable and the RCOG in no way approves.” It said that it is “concerned to be associated with this practice,” which it described as “ethically questionable,” and that it has “strict policies on its advertising and sponsorship and does not seek advertorials for any of its publications.”

The college receives £90 000 a year from B+Y Publishing Limited, the company that publishes the magazines. The RCOG told the *BMJ* that senior clinicians vet all adverts and editorial content.

Bounty is another promotions company, with several points of contact with new families. It gives out a total of 2.6 million “baby bags” a year. Some are distributed by NHS healthcare professionals and others by Bounty representatives in postnatal wards.

Most NHS hospitals condone the giving of 812 000 newborn “packs” each year, and the NHS benefits from allowing access to its wards. Bounty told the *BMJ* that it pays £2.3m to the NHS annually for access. Bounty said that over 90% of mothers are “satisfied” with the packs, citing its own survey of 4000 parents in January 2013.

However, Belinda Phipps, chief executive officer of the National Childbirth Trust, is angry about the way that the NHS allows Bounty access to new mothers. “Within hours of giving birth, they are being asked questions—their name and address, details of life insurance—and they give them in good faith, thinking they’re speaking to a hospital person. In fact it’s a commercial person. The NHS is condoning a sales team collecting data from mothers in order to sell their name on to commercial interests.”

Bounty profits by selling the parents’ details to companies. Although the section on contact details that parents fill in includes the information that “by providing your email address and/or telephone number you agree to be contacted by these channels as well as post,” many parents have told Phipps that they did not understand what they were signing up to. Bounty told the *BMJ* that 3% of parents “opt out”; the details of those who do not are sold on to other companies.

Additionally, the Bounty packs have an air of officialdom: the bag given after birth contains application forms for child benefit, together with

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samples of washing powder, nappies, and advertising flyers. But child benefit forms are available online, and they could be distributed by midwives or hospitals. Bizarrely, HM Revenue and Customs pays Bounty more than £90 000 pounds a year to distribute the child benefit forms. So families supply their details,

which can be sold on by a commercial company, which in turn is paid by the government to supply freely available child benefit claim forms. Why?

A spokesman for Bounty told the *BMJ* that “over a decade ago Bounty offered to conduct

a small scale pilot which satisfied HMRC that Bounty could distribute child benefit forms directly and quickly into the hands of parents as soon as they need them.”

HM Revenue and Customs told the *BMJ* that “Bounty distributed 82% of all child benefit claim forms in 2011-12, averaging about 10p for each claim. If HMRC posted the forms individually the cost would rise to around 33p for each claim.”

A survey done by the National Childbirth Trust in January 2010 tells a different story from Bounty’s. It found that half of just over 1000 parents did not know, and were unhappy, that their details could be used to target advertising to them. A further 37% knew that their details would be used in this way and were unhappy with it; the remainder were unconcerned.

Over at the Royal College of General Practitioners, *Emma’s Diary* is posted in bulk to general practices to pass on to pregnant women. It also offers “gift packs” on the receipt of information such as the woman’s and her family’s dates of birth, which supermarket the family usually shops at, and a telephone number and email address.

Emma’s Diary is validated by the large RCGP stamp on the front, and inside says, “Presented with the compliments of your General Practitioner.” It comprises 25 pages of medical information and 119 pages of adverts.

In the RCGP’s accounts, more than £214 000 is entered as “other income including grants and sponsorships”; the RCGP would not tell the *BMJ* how much of this was the net gain from advertising through *Emma’s Diary*. In a statement it said that “all content is quality assured by our RCGP editorial board.”

Is it right that the NHS imply its approval for the thousands of products being promoted at parents? Do we really want parents placed under advertising pressure and for NHS doctors, radiographers, and midwives to be the conduit? Some conflicts of interest in medicine are hard to avoid. Others are not. These should be easy.

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