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A Waste Of Flavour

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ABSTRACT

As the issue of food waste becomes ever-more prominent, and its economic and ecological costs rise, the question of what to do with it presses more heavily upon us. If we are to make greater use of the trimmings and byproducts of food production, there needs to be a gastronomic as well as an ethical reason for doing so. Fermentation and other methods of curing offer one solution to this, being an effective way of unlocking the inherent flavour in stalks, scraps and skins.

We all know that we need to waste less food, at both a personal and an industrial level. Magazines and television show us how to marshal and corral leftovers, how to cook once and eat for the week, while campaigns such as the War On Waste show us the apparent futility of these endeavours; we fret over a bag of liquefying salad while tons of unwanted roots or brassicas rot in the fields. We are encouraged to see each item of food as a precious commodity, the product of a unique animal life or of a year's careful farming, when it is clear that supermarkets and the farms which supply them see only a continuous cycle of disposable stock, with waste the inevitable consequence of our need for convenience, availability and consistency. Somewhere between these two extremes sits the restaurant kitchen. My first job was in a university canteen, doling out food to the summer schools and language classes which populated it during the vacation, and the amount of waste involved was quite

phenomenal. We would spend the lunch service handing over neatly small portions of lasagne or pie, explaining carefully to the baffled Italians that, sorry, they could only have *one* bread roll each – and then sling trayfuls into the gobbler. There was a salad bar, the upkeep and decoration of which occupied the entirety of one chef's working hours; he would spend every day carving tomato roses, fanning strawberries, arranging neat tangles of julienned carrots around his plates of quiche, cold cuts and coleslaws, only to see the whole thing demolished in the first half-hour of lunch. Then he'd pick up the pieces, throw away the detritus, and start all over again.

This kitchen, which occupied a space as big as the dining area, was an operation of volume, where little if any attention was paid to the actual quality of the food served; in such an environment, ingredients can be very cheap indeed, and are, perhaps understandably, treated as disposable, less important than the time required to prepare them and the space required to store the finished product. Most businesses do not run like that, but a degree of wastage is always expected. In the case of meat and fish especially, you have only a short window of time in which to sell each raw piece, say three days; after that, you can cook it and buy yourself another three days, and that's that. Hopefully you feed it to yourself or to your staff, but it is of no further use to the kitchen. A menu is a balancing act between choice and frugality; it needs to be of a big enough size to satisfy the majority of your customers, but not so big as to leave your fridges groaning with uneaten, uncooked and unwanted food. This is especially true, I think, in the early years of a restaurant, when you are still finding your clientele and are not necessarily busy *all* of the time; it is, at any rate, manageable. Short or entirely set menus, as well as allowing a tight focusing of the kitchen's skill, are a way of minimizing this sort of wastage.

Imagine, then, that your restaurant *only* offers a set menu, that it *only* takes bookings; barring no-shows, who you will publicly shame and perhaps blacklist, you need never throw away another piece of protein! This is ideal, you might think, both economically and ecologically - but mainly the former. Your food costs might be perfectly balanced, you might

sell every piece of prepared food that comes out of your kitchen, but it still generates a huge amount of waste. More, in fact, than most lower-end restaurants. Broadly speaking, the higher the quality of food, the greater the quantity of raw materials that a kitchen deals with. A decent pub might cut their own chips; a gastropub makes their own ketchup to go with their own chips. A really good one makes their own salt to go on their own chips, and maybe bypasses the ketchup. Almost anything can be got peeled, portioned and packaged, industrially produced for poky, time-poor kitchens; conversely, at the other end of the market, anything which can be got in its raw unprocessed state, from potatoes to whole fish and sides of meat, generally is. This is a good thing. You get a fresher product (or at least have more of an idea of how fresh it is) and you get more control over it. (Fishmongers, for example, tend to prepare fillets of mackerel by cutting out the flesh around the bones, while I like to pin-bone them properly with tweezers.) On the other hand, you also end up with a huge amount of rubbish. A lot can go in the stockpot, but you are still left with potato, garlic and carrot peelings, radish or turnip tops, the stalks and excess leaves of cabbages, kohlrabi, cauliflowers and kale, cephalopod guts, mollusc and crustacean shells, the heads and entrails of oily fish, excess fat or trim from almost any animal; then the waste from the restaurant itself, ends of wine and milk and bread, coffee grounds and tea leaves, unfit for their original purpose but still, often, useful. I work at a plant nursery with a kitchen garden, so a lot of the vegetable matter can go straight onto the groaning compost heaps; even with this luxury, there is still a lot to throw away. This, it strikes me, is a very modern problem. We're lucky, in fact, that this is a case of ethics rather than mere survival.

The history of cuisine – broadly coincident with the histories of agriculture and of human civilization – is, by and large, an account of what can be salvaged, by salting, brewing, burying or hanging, in the face of decay and death. Long-distant hunter-gatherers could enjoy their occasional feasts, stuffing themselves with meat and with offal and throwing what they could not eat to their dogs, knowing that tomorrow would mean a return to nuts, berries and wild greens; but settlements and fields meant kitchens, larders and storehouses, and with them, the techniques required to husband

resources against the times of scarcity. Many of these techniques are still in use today, in professional and amateur kitchens alike; although dropping off since the advent of refrigeration, they have recently reemerged, albeit excused with descriptors such as 'artisan' and 'home-made', and associated warmly with the so-called 'peasant' cuisines of the world. In fact, of course, such techniques were once universal, and gave rise to much of what we call 'cuisine'. What was revolutionary about refrigeration was not that it allowed us to store food for long periods - humanity has always found ways of doing that - but that it allowed us to do so in a state of stasis. While this is undoubtedly convenient, it is also less interesting and often less delicious. The fact that we can keep milk as milk, and enjoy it for breakfast every morning, means we don't have to make it into butter, or yoghurt, or cheese, as our ancestors would. Of course, we can still go and buy those things, but they, too, are static products, where once our food was in a constant state of change.

Milk, at any rate, is nutritious and tasty, and it's not surprising that we would try to preserve it; of more interest to me are the ingredients which we felt the need to coax gently into palatability, through a long process, often, of fermentation. Who first ate an olive? In their fresh state they are inedibly bitter, hard and unpleasant; their taste, far from being 'as old as cold water'[i], is a product, rather, of human intervention and ingenuity. While such early food processes are often glossed as happy accidents, it's hard to see how these acrid fruit were first left in a bath of lye or salt to develop their complex, divisive flavour. Chef Stevie Parle currently does a similar thing with sloes, turning them into a kind of British olive[ii]; an excellent idea, but there is less of a leap from the raw sloe, which responds well to cooking and sweetening, than there is from the raw olive. The olive must have seemed a kind of waste product of nature, a fruit which, though not poisonous, could not be eaten - if even this could be rendered edible, what could be done with other waste products?

A brief glance through the cookbook of Apicius, which collates recipes from a few hundred years of Roman civilization, will show you the absolute ubiquity of *garum* within that cuisine, from the very highest tables and down[iii]; in fact, several different grades, comparable to those which

govern olive oil, were available, to suit usage and salary. Although often translated as anchovy sauce, this substance could have been made from a ferment of any small pelagic fish or mollusc and would have given the dockyards of the Empire a quite unbelievable stench. This was the waste of the fishing industry rather than the kitchen. Both fish too small to bother eating and the guts and trim from larger ones could be pressed into service as a sauce which seems to have been a sort of universal seasoning in classical Rome, much as the (very similar) *nước mắm* in Vietnam, or as sriracha has become for a certain kind of ramen enthusiast. Now, if *garum* was made of fish offal alone, its ubiquity would be entirely understandable. The deep umami taste of fermented, salty protein is hugely addictive, and to create it entirely from waste is quite remarkable. The fact is, though, that its production also involves quite large amounts of salt, which, if not a luxury item in the ancient world (it was too important for that), was at least expensive; its profligate use, economically necessary in, say curing the choice parts of the family pig for the winter, seems a little excessive for a flavouring - but still it was made. This combination of the epicurean and the economical points to a use for waste in our own kitchens. Salt, happily, is now freely available, and if we can use it to extract such a depth of flavour from rubbish, why wouldn't we?

Traditionally a nation of vinegar pickles, a lot of British chefs (myself included), influenced by the cuisines of South-East Asia, Eastern Europe, and North America, are discovering the possibilities of the widespread pickling method of lacto-fermentation, which relies on bacteria to do most of the work for you; kimchi, originally Korean, is a very popular style. The process is very simple. Vegetables, often cabbage or other brassicas, are rubbed with salt and perhaps sugar, and left overnight; the next day, they are drained and combined with a thick, spicy paste, then packed into jars, barrels or pits, and left to ferment for days, weeks, or months. When you bottle something in vinegar, you are, after the initial period of pickling, keeping it essentially static; the salt and the acid combine to kill off all microbial life, and the pickles themselves remain stable, with a slow move, perhaps, towards an unwanted mushiness. A lactic ferment, on the other

hand, is a living thing. It will keep changing every day it is alive, and the vegetables in it will undergo a process almost like cooking. We are familiar, I suppose, with the so-called cooking which a fish *ceviche* undergoes, bathed in its curing acid; the long ferment of kimchi allows something almost like stewing to occur, breaking down tough vegetable fibres into something chewable, digestible, delicious. Enter, then, my kitchen waste.

The amount of kale that a relatively small garden can produce over the course of a winter is really quite astonishing, and the percentage of that which is tough, barely edible stalk can be disheartening; when the pile for compost is twice as big as the pile for blanching, you start to wonder what to do with it. The answer, of course, is kimchi. The thick stalks of cavolo nero, finely chopped into little squares and massaged with coarse salt, become juicy and richly green; fermented with chilli, garlic and herbs, they soften and mellow, and their strong cabbage flavour deepens to an almost truffle-like pungency. Here, as with *garum*, we find that waste plus salt equals dense flavour. Michael Pollan and others have noted the almost fanatical fear of microbes which has taken root over the past fifty years or so^[iv]; once you rid yourself of that, fermentation turns out to be easy and almost intuitive, watching the bubbling development of your pickles almost like a pet. Kimchi (or sauerkraut, which uses a similar dry-salting style) is an excellent way to deal with harder vegetables; for softer ones I turn to the Ukrainian chef Olia Hercules' recipe for fermented tomatoes in her book *Mamushka*^[v]. When I came across this it was, happily, the height of summer, with a huge glut of tomatoes coming in from our kitchen garden, all of them very rich and flavoursome, but the recipe works almost as well with imported Dutch tomatoes in the middle of winter. Pour a simple brine, 35g of salt and sugar to a litre of water, over your tomatoes; leave to ferment. That's it. It works just as well for mixed pickles, little squash, young carrots, radishes and so on; for some reason, my cucumbers always fail, but I'm working on it.

Although this style of ferment demands a better quality of raw material, it leaves you with a waste product of its own - the excess brine. This, especially in the case of tomatoes, is no hardship. The combination of umami-rich, deeply savoury tomato with the added punch of fermentation

is a powerful one, and I found myself fermenting tomatoes that were over- or underripe, scarred or woolly or just a bit dull, purely for the sake of the brine, which I used as a dressing, as a cooking medium (I'd recommend it for shellfish), and most importantly, as a starter for other ferments. Sweet, salty, and already teeming with lactic acid bacteria, it gives body and heft to the more watery vegetables, and allows you to start a ferment with greater peace of mind. Other bacteria, yeasts and moulds are much less likely to take root where there is already an established community. Most of the time, I have a fairly cavalier attitude towards this; most pickles will happily get started by themselves, and will tell you, by smell or by sight, when they have gone bad. I take ph readings for peace of mind, and if a ferment sits for too long without going sour, out it goes. Fermenting protein - especially animal protein - requires a little more care.

We sell a fair amount of squid in the restaurant, which, you'll know if you have ever prepared a whole one, come with quite a lot of built-in waste. Guts, skin, ink-sacks, those two extra-long tentacles, the baby gurnard or sole they always seem to have just eaten, the often tough wings, trim; added together, a third or even a half of the weight of these cephalopods can be thrown away, a waste of landfill space, of the restaurant's money, and of the quotas, stowage and time of our beleaguered fishing industry. Given this, and my vague researches in classical cuisines, I was extremely interested when I came across a Rene Redzepi recipe for squid *garum*^[vi]. Up to this point, I had never considered making such a thing; now, with the tools and ingredients at my disposal, here was a recipe. Meat or fish are, justifiably, the source of some of our greatest fears about bacteria and illness. No-one wants to get botulism, or worse, cause an outbreak through a restaurant kitchen; there are, though, fairly easy ways to avoid it. Large amounts of salt or smaller ones of saltpetre, sufficient acidity, and inoculation with 'friendly' microbes are all ways to avoid poisoning; Redzepi's recipe uses a lot of salt and barley *koji*, a steamed grain covered with a sweet mould, used in the production of miso. I didn't have any of that, so I soured the mixture with my tomato brine, bringing the ph down to four and adding, I hoped, sufficient lactic acid bacteria to combat anything more menacing. After leaving the lot at 60° for 10 weeks (one of many

reasons not to try this at home) I was left with an extremely dark and complex fish sauce; I've used it ever since, as an anchovy substitute, and nobody has got ill yet[vii].

Churning on-the-turn cream into butter, dry-curing meat and cheeses, fermenting guts and roots and bones; these are all ancient skills, fundamental to the development of our cultural and culinary identities, which have been supplanted in the modern kitchen by the tin can, the freezer, the refrigerator, but these modern methods can only keep fresh things fresh, preserving a static ideal of what good food should look like. Food doesn't have to be complicated, we're told - just buy the best you can, at the height of its season, and enjoy it at its freshest. This is all well and good, and if it keeps us from flavourless, air-freighted or intensively grown produce, then all the better; but such a prescriptive, subtly competitive model of cooking gives us nowhere to go if we 'fail', if our vegetables aren't the freshest, or if we leave that tomato one day past its ideal ripeness. I don't know (I don't know if you could possibly work out) if my efforts to preserve and adapt, to salvage flavour from rubbish, can possibly count against the huge wastefulness - of water, gas and packaging, as well as of food - which plagues the restaurant industry. It is good, though, I think, to develop and rediscover these ancient skills; to try and find a third way between the convenience of cheap, industrialized food and the beatific elitism of some of the farm-to-fork movement; to make the best of the materials and resources we have to hand; to learn that frugality and care need not be merely puritanical, and that we can, if we like, create pure flavour out of bones, out of guts and out of waste. I invite you, at least, to try.

[i]Lawrence Durrell, *Prospero's Cell*(London: Penguin, 1978) p96

[ii]At his restaurant Craft; they aren't, I think, currently on the menu.

[iii]Apicius, trans. Barbara Flower and Elisabeth Rosenbaum, *The Roman Cookery Book : A Critical Translation of The Art Of Cooking*, (London: Harrap, 1974) *passim*

[iv]see Michael Pollan, *Cooked: A Natural History of Transformation*, (London: Penguin, 2014)

[v]Olia Hercules, *Mamushka*(London: Mitchell Beazley, 2015) p157

[vi]see separate image, taken from Rene Redzepi on Twitter

[vii]as well as Redzepi's recipe, I'm indebted to the paper 'Umami and the foods of classical antiquity', Robert I Curtis, *The American Journal of Culinary Nutrition*, 90, 2005, 712-718

1 Like



Michael Cooper

2d

Hi Thom,

Any chance you have the image from Rene's Twitter feed to hand? No worries if you have to travel through Twitter though!

Also, for pH are you using a Hanna (or similar) probe/ meter?



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