AIMA Newsletter N°15 February 2020 Part 2

Starting young at Howell Living History Farm
Photo courtesy Pete Watson

Agriculture * Food * Environment * People

A.I.M.A.
International Association of Agricultural Museums
Internationale Vereinigung der Agrarmuseen
Международная Ассоциация сельскохозяйственных музеев
Association internationale des musées d'agriculture
Asociación Internacional de Museos Agrícolas
(ICOM-Unesco Affiliated Organisation)

Highlights

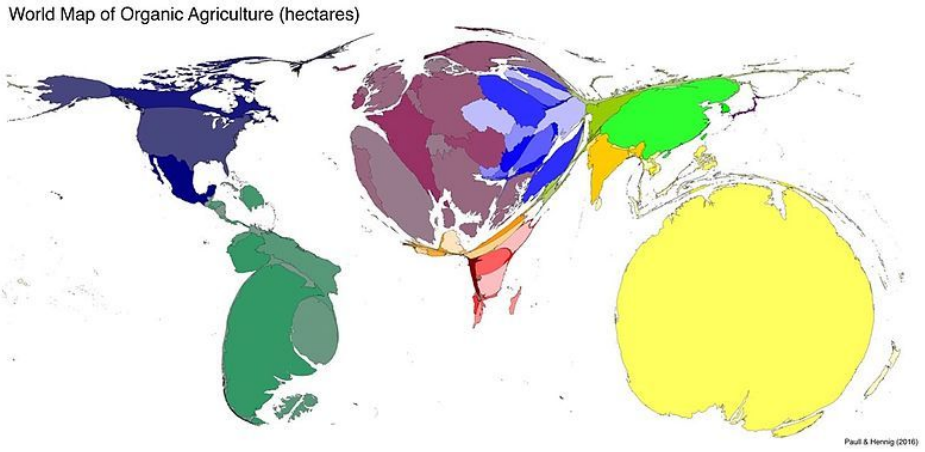
- **News on agriculture and food**
- **Resources and photo-essays - working with animals**

- Be sure to visit the **AIMA website** at http://agriculturalmuseums.org/ for more information and frequent updates on subjects concerning museums of agriculture.
- … and send this **Newsletter** on to your friends to encourage them to join us in the AIMA.

News on Food and Agriculture

NB weblinks are for your information and to identify sources. In some cases, access may be limited to subscribers.

Going fully organic would increase farm emissions



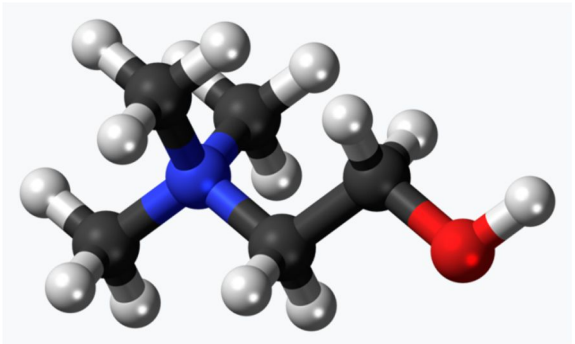
World Map of Organic Agriculture, John Paull and Benjamin Hennig, 2016, Wikipedia "Organic farming", Creative Commons

If all farms in England and Wales went organic, it would increase greenhouse gas emissions, even though emissions from individual farms would go down. Much more food would have to be imported, because the amount of food produced would decrease. In the global picture, it would be necessary to reduce land needed for farming to limit global warming. Although emissions per unit of food are an average of 20% lower for organic crops and 4% lower for animal products, yields per hectare are also lower – for wheat and barley, yields are half those of conventional farming, so 1.5 times as much land is needed for such crops (depending on how organic land is sourced). For the same reason, going 100% organic may also harm biodiversity, but the entire issue is clouded by the difficulties involved in such studies, including factoring in major dietary changes under way around the world. Consensus for the moment is centered on a mix of organic and conventional methods. CGK

Michael Le Page "Going fully organic would increase farm emissions" in *New Scientist*, Vol. 244 No 3253, 26 October 2019, p. 9; -> *Nature Communications*, DOI: 10.1038/s41467-019-12622-7 *New Scientist*: https://www.newscientist.com/article/2220659-going-fully-organic-would-raise-greenhouse-gas-emissions/

₪ ₪ ₪

Choline in meat – the neglected nutrient?



Ball-and-stick model of the **choline** cation, a water-soluble essential nutrient. The nitrogen atom has a positive charge. Color code : Carbon C black, Hydrogen H white, Oxygen O red, Nitrogen N blue. Wikipedia "Choline", Creative Commons

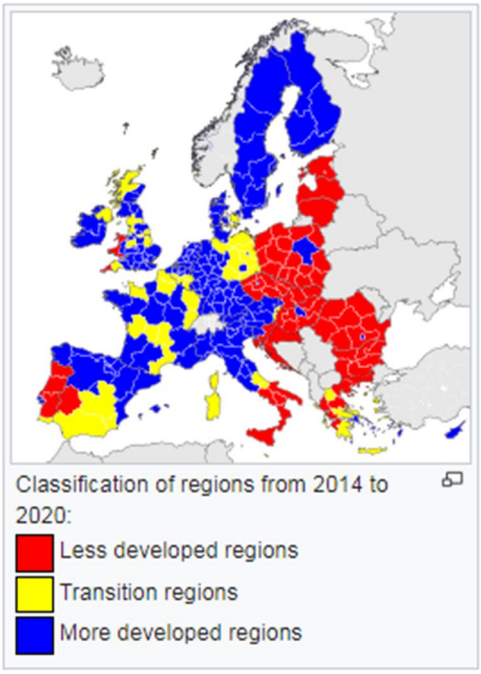
People cutting down on meat and egg consumption may not be getting enough choline, for which there has been far less research than for standard vitamins, which contributes to cell membranes, liver metabolism and the signaling molecule acetylcholine in brain and muscle. More recent research emphasizes the high quantity of choline in breast milk and that it can cross the placenta before birth and the greatest concern now is for fetal brain development, as well as brain health later in life. Making up for choline intake from meat and eggs is possible with nuts and soya beans, for example, but requires very large quantities. It may be that the benefits of eating less saturated fat outweigh those of sufficient choline intake. As usual, the debate is on-going, so watch for more news. CGK

Claire Wilson "The neglected nutrient" in *New Scientist*, Vol. 244 No 3253, 26 October 2019, p. 20-21; *New Scientist*: https://www.newscientist.com/article/mg24432534-900-choline-the-forgotten-vital-nutrient-were-not-getting-enough-of/ and https://nutrition.bmj.com/content/early/2019/09/03/bmjnph-2019-000037

₪ ₪ ₪

Food self-sufficiency in post-Brexit Britain may be a dream indeed

Opportunity or programmed disaster or something in between the two? The UK produces about 60% of the food it consumes compared with nearly 75% in the late 1980s. How feasible is a move back toward self-sufficiency? Awaiting a consensus and further studies, recent investigation indicates present consumption of meat and dairy products cannot be covered internally without reducing food intake and increasing factory-style production. Emphasis on a plant-based diet is equally unfeasible, since most UK terrain is not suitable for commercial cropping, hence the emphasis on livestock. Even such drastic measures as converting nature reserves and housing land to agriculture would achieve only a 30% boost to crop production, not to mention fruit and vegetables, sugars, seeds and oils. In fact, in-country food production rose from 30% in the 1930s to 74% by 1987, thanks to the green revolution.



Classification of EU regions with regards to the EU Regional Policy from 2014 to 2020, Wikipedia

"European Union", Creative Commons, Attribution: Cranberry Products at English Wikipedia

Is the "Dutch solution" an answer? The Netherlands is the world's second-largest food exporter, with a land area 1/6 of the UK and nearly twice the population density, but these statistics are based on agri-food exports, not on home production, and includes the biggest single Dutch export – cut flowers, as well as the intense import-export activity that makes the NE the world's fifth exporter of…. oranges. In analysis of calorie production, the NE is in the bottom 10, on a level with Syria, Armenia and Zimbabwe, in spite of position as global leader in sustainable agricultural technology. Even if the UK were to adopt all the Dutch panoply of production, it seems that self-sustainability is a mathematical impossibility.

James Wong "The dream of food self-sufficiency" in *New Scientist*, Vol. 244 No 3253, 26 October 2019, p. 20-21; *New Scientist*: https://www.newscientist.com/article/mg24432530-100-brexit-ideas-of-uk-food-self-sufficiency-are-just-pipe-dreams/

Swine fever is driving China's pork crisis

African swine fever (ASF) has sent China into a food crisis, also pushing the cost of living per year over the government's cherished limit of 3%. The disease has spread rapidly in China since ASF officially arrived in 2018 and it matters: the average Chinese person consumes 30kg of pork per year, when some 40% of pigs in the country have been lost, the government is digging into its strategic reserves of meat, many farms and business are threatened and imports have risen dramatically. The government has rushed to certify farms in Brazil, Ireland and other countries, as well as lifting a ban on imports from Canada. This has set off a rise in pork prices worldwide and no way to fill the gap: global pork product exports in 2018 were at 8 million tons and China is short by 24 million.

Parkplatz der Begräbnisstätte Esterwegen, Bundesstraße 401 in Esterwegen (Sign in parking lot in Esterwegen DE), Author Frank Vincentz, Wikipedia FR "Peste porcine africaine", Creative Commons

ASF is highly contagious, so hardy that it can survive cooking and processing, and can remain in frozen meat for years. It is transmitted directly from animal to animal or through feed containing infected meat, and began to spread more rapidly in Europe. In November 2019, it leapt 300 km from farms in eastern to western Poland, where it also looms over German production areas. The spread in Asia may well be due to the custom of small farmers marketing pigs live, rather than through processing into frozen pork, and the lack of compensation for small farmers has led to uninspected supply lines there. Meanwhile, Denmark and Germany are building fences to keep wild swine from passing ASF to domestic herds, even to pet pigs.

Bibi van der Zee, and Michael Standaert in Shenzen 'Not enough pork in the world' to deal with China's demand for meat in *The Guardian* online, 23 November 2019

African swine fever and rise in food prices

Loss of over half of China's pigs has driven food prices to a two-year high with a 9.5% hike in November 2019 over the same month in 2018, according to the FAO (UN Food and Agriculture Organization). China has increased its non-pork meat import to fill the gap, favoring a hike of 54% in beef imports along with the 49% increase in pork imports. Food

prices worldwide are a more subtle affair, as Chinese imports are dwarfed by their domestic production and they have filled part of the meat gap by ramping up poultry production.

Adam Vaughan "African swine fever contributes to rise in food prices" in *New Scientist* 14 December 2019, p. 10.

₪ ₪ ₪

Shepherding with drones

Livestock handlers working in New Zealand, Britain and Australia with deer, sheep and cattle often started with a Christmas present of a drone for aerial photography and quickly saw they might be able to use it in work. They often learned from watching another farmer herding on YouTube and went on to their own experiments, which they share when the drone saves them time, money, adds to their own and the animals' safety and quality of life. Sheep can be trained through positive reinforcement with rewards to follow a drone overhead and this is surely less stressful than being barked or snapped at. If sheep get too blasé about their aerial herder, they can be set back on track with recordings of barking - "It's quite a crack-up seeing the drone flying around, barking at the sheep."

Left: Drone Fox-C8 XT en vol, Wikipedia FR "Drone", Author Zully C3P, Creative Commons; Right: A Border Collie at the sheepdog trials at Rural Hill Farm in Huntersville, North Carolina, Author Scot Campbell, Wikipedia "Sheep", Creative Commons

The benefits extend to the dogs, as well, since they quickly learn to use the drones to anticipate the direction a herd is taking and – when stags or cows with calf at foot are feeling aggressive – dogs will stand under "their" drone to feel safer. One shepherd cited a typical herding before adopting a drone that required four men with two dogs each, which is now done with two men and one drone. Most the herders interviewed agreed the most appreciable and time-saving aspect is simply monitoring: if you hear your cows sounding disturbed and can see it is simply because a water trough has turned over, it saves you a full round of inspecting all the animals.

Alyx Gorman "Sky shepherds: the farmers using drones to watch their flocks by flight" in *The Guardian* online, 26 December 2019, https://www.theguardian.com/technology/2019/dec/26/sky-shepherds-the-farmers-using-drones-to-watch-their-flocks-by-night

₪ ₪ ₪

Cow and calf: to separate or not to separate? and when?

The three major issues that divide dairy farmers from animal welfare campaigners are: outdoor access, killing male calves immediately after birth and separating cows from their female offspring. The last has led to experimenting with "ethical dairy farming" – leaving calves with their mothers in the "calf at foot" system.

Getting started is not easy – a Scottish dairyman with 125 cows is presently the largest known producer in Europe, but it took him a full year to persuade his cows their calves would be waiting for them when they came out of the milking parlour. Calves still need to be separated after weaning at around five months, a process that can be managed through overnight periods of separation first and using a surrogate mother – usually an older dry or resting cow. She can lead all the calves into a field to settle them and build up the social bonding among them, making the final separation easier, when the female calves stay on the farm to become milking cows, while the male calves are sold after five to seven months to produce veal.

Wikipedia "Cow with calf", Author David Monniaux, Creative Commons

In spite of some success stories and much support from animal activist groups, there is on-going debate among farmers and scientists about the deeper benefits: leaving cow and calf together reduces mortality and increases growth rates, because the calves have all-day access. Suckling also enhances the calves' immune systems and protects cows against mastitis, a major threat to dairy farming. However, the amount of milk lost to the farmer is spectacular – the Scottish pioneer estimates his losses at more than 2,000 litres per cow, over £500 in lost revenue, based on the current UK average milk price. The cows also hold back fat for their calves when taken into the milking parlour, "giving us semi-skimmed milk", he jokes.

There has been a surge in interest in what he is doing from across the UK and overseas, with vegan campaigners raising consumer awareness of animal welfare and creating a new market for ethical dairy practices. Plant-based "milks" have also accustomed people to paying more for the real thing, even if it remains a "niche market" for the time being. Certainly, more scientific studies are needed. A recent review indicates that longer cow-calf contact has positive behavioural impacts for calves, while early separation within 24 hours reduces distress for both mother and offspring. Separation – whatever the age – is always stressful. Present organic standards separate calves from their mothers after birth, but guarantee they are fed cow's milk for their first 12 weeks. In spite of skepticism, there are more than 400 dairy farms in Europe and Australia trying out the "calf at foot" systems and the Scottish pioneer believes the improvement in the health and immune systems of the young calves will yield long-term dividends that will compensate, to some extent, for loss of milk.

Tom Levitt "Rise of ethical milk: when cows and their calves are separated" in *The Guardian* online, 29 June 2019, https://www.theguardian.com/environment/2019/jun/29/mums-ask-when-cows-and-their-calves-separated-rise-ethical-milk-vegan

Plants in distress emit sounds

A University of Tel Aviv study indicates tomato and tobacco plants make sounds, when their stems are cut or they lack water. Humans cannot hear at frequencies in the ultrasonic range of 20 to 100 kilohertz, but some mammals and insects can. Cavitation – vibrations from air bubbles forming and exploding inside water transport tubes – seems to be responsible. Drought-stressed tomatoes and tobacco upped the pace of the sounds they normally emit and tobacco emits louder noises over a dearth of water than when the stems are cut. This phenomenon requires more research to be conclusive about the plant bioacoustics involved, but it appears that the silence of the Plant Kingdom may simply have long gone unnoticed.

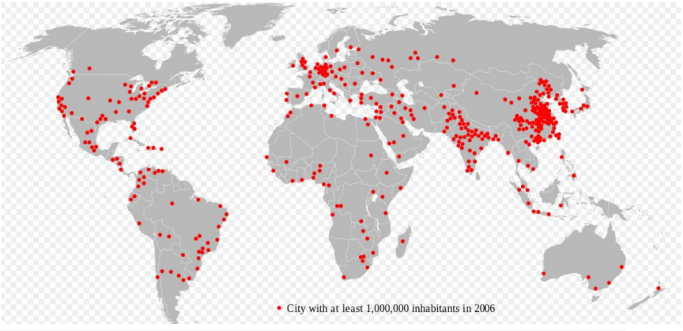
Adam Vaughan, "Stressed plants let out ultrasonic squeals" in *New Scientist*, Vol. 244, N° 3260, 14 December 2019, p. 16. See bioRxiv, https://www.biorxiv.org/content/10.1101/507590v4 for full text access.

Cherry tomato *(Solanum lycopersicum cerasiforme)*, Wikipedia FR "Tomate", Author Goldlocki, Creative Commons

₪ ₪ ₪

Europe's mega-cities have left town and country poorer

While Paris, Amsterdam, Munich and Berlin can aspire to compete with Milan for popularity with its city-dwellers - 85% of residents polled would not wish to live anywhere else – the rest of Italy, after 20 years of economic stagnation, is far from the dream. Mega-cities often follow the pattern of Milan – monopolizing finance, tech, design and innovation. Unprecedented levels of foreign investment are driving new developments and architectural attractiveness, as well as a 50% rise in tourism that draws the most ambitious and talented young Italians, who become an inner-city elite catered for by a low-paid precariat, living on the peripheries and this exacerbates a damaging divide between the great cities and ageing towns and rural areas. Between 2000 and 2016, Milan increased its share of Italy's gross domestic product by an astonishing 17.7% while middle-sized and small towns, not to mention villages, saw their economies flatline.



Left: View of Shinjuku skyscrapers and Mount Fuji as seen from the Bunkyo Civic Center, Bunkyo Ward, Tokyo, Author Morio, Wikipedia "Megacities", Creative Commons; Right: Map showing urban areas with at least one million inhabitants in 2006, Author Nicoguaro, Wikipedia "Megacities", Creative Commons

At stake is the very dignity of other places like Melzo, a small Lombard town 12 miles north-west of Milan and 20 minutes away on the train, once the HQ of Galbani, producers of the

original Bel Paese cheese and the town's historical powerhouse in the metalworking industry has also disappeared. Much of the surrounding countryside is now used for agro-tourism, not farming, so there are few jobs on the land, while the town gets older and older.

Julian Coman "How the megacities of Europe stole a continent's wealth" in *The Guardian* online 10 Nov 2019, https://www.theguardian.com/cities/2019/nov/10/how-europes-cities-stole-continents-wealth

₪ ₪ ₪

Flood farmland to make peat bogs and reduce carbon emissions?

Peat may seem like a fringe issue in the battle against climate change, but according to a recent study by Aarhus University, flooding cultivated former peatlands could cut Denmark's emissions by 1.4m tonnes of carbon dioxide a year – about the same amount produced by the capital city of Copenhagen. Denmark is now committed to the world's most ambitious climate goals and has made them law, as the country is currently on track to reduce emissions by 48% by 2030, has now committed to reduce them by 70%, and aims at being carbon neutral by 2050. The country's political parties have agreed to spend 200m Danish kroner (£23m) a year on buying up land for reflooding over the next decade and they are backed by both the main business lobby, the Confederation of Danish Industry, and the Danish Agriculture and Food Council, the main agricultural trade body, which likewise aims to make the entire Danish food industry climate neutral by 2050.

Not everyone thinks these goals are attainable. The Aarhus professor behind last year's study on cutting agricultural emissions is concerned that the goals are so demanding that meeting them means farmers will have to cut food production as well as flood land. Denmark can only reduce emissions from agriculture by about 20% without reductions in food production, he estimates, which would be remarkably counter-productive. The president of the Danish Society for Nature Conservation believes Denmark will have to sacrifice its bacon industry., which imports enormous amounts of soy to feed pigs for export to China, hardly a sustainable prospect. However, there is also a good argument for producing in Denmark, where it is done with the least climate impact.


> 
?

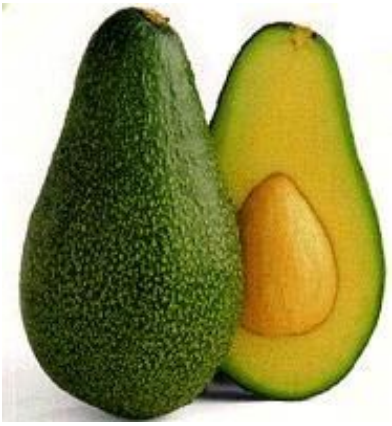
Left: Landscape seen from Ellemandsbjerg, Author Old Dane, Wikipedia "Denmark", Creative Commons; Right: A raised bog located in Ķemeri National Park, Jūrmala, Latvia, formed approximately 10,000 years ago in the postglacial period and now a tourist attraction, Wikipedia "Bog", Author Raul Cortez999, Creative Commons

Relatively good humour prevails among the differing opinions. One farmer's plan for flooding part of his land would reduce emissions by an estimated 2,000 tonnes of carbon equivalent a year, enough to offset the climate impact of 350 Danes. When his neighbours complain that their Hereford cattle might not tolerate wet, boggy soil, he suggests they could all go over to grazing water buffalo, but no one in the region is used any more to cattle with horns…

Richard Orange "Danish farmers divided over plan to flood their lands to cut emissions" in *The Guardian* online, 28 December 2019 https://www.theguardian.com/world/2019/dec/28/danish-farmers-plan-to-flood-land-peat-bog-carbon-emissions?utm_term=RWRpdG9yaWFsX1RoaXNJc0V1cm9wZS0yMDAxMDg%3D&utm_source=esp&utm_medium=Email&CMP=thisiseurope_email&utm_campaign=ThisIsEurope

₪ ₪ ₪

Green gold: Mexican avocados, a new conflict commodity



Bacon-avocado, Wikipedia "Avocado", Author unknown, USDA public domain,

Avocados are recommended by dieticians for their high nutritional content and "good" fats. In Mexico, the industry is popular because it pays up to 12 times the Mexican minimum wage and the country tops the list of world exporters, ahead of the Netherlands, a major non-producing exporting hub, and Peru. Most of Mexico's avocados go to the US, despite domestic production in California and Florida while UK supermarkets are mainly supplied from Spain, Israel, South Africa, Peru and Chile. Europe's consumption of avocado stands at 1kg per person per year, with France as the fruit's largest market in Europe, according to the Netherlands' Centre for Promotion of Import. The US consumes 4kg per person per year and the fruit is also in high demand in China, which imported 1,000 times more of them in 2017 than six years before.

Mexico is the world's number one producer of avocado and exports of the "green gold" from the state of Michoacán, which produces most of Mexico's avocados, were worth $2.4bn last year, but the state is a long-standing hotbed for criminal violence, so that avocados may become the next "conflict commodity", akin to "blood diamonds" in Angola and Sierra Leone and minerals in the Democratic Republic of the Congo. In Mexico, cartels have turned to avocados, in the face of the government's tightening war on drugs, but this is typical of a broader strategy: the model is to control a given territory, and within in it exploit whichever commodity is locally available. That includes avocados, but also limes, papayas, strawberries, illegal logging and mining, among others.

Competition is deadly. Jalisco New Generation cartel claimed the savage murders of 19 men in August, intent on maintaining dominance over the local avocado trade through any means, including use of forced and child labour, illegal deforestation, illegal logging and forest-clearing for cultivation, cutting woodlands to set up avocado groves.

What to do? Can consumer action count? There is no simple answer. A boycott of Mexican avocado is not the right response because the sector sustains thousands of hard-working, peaceful families, and might lead criminal groups to prey on civilians still more aggressively to make up for lost avocado income. Some experts say that traceability is key to getting the issues under control, but that is easier said than done. The nature of avocado value chains makes it difficult, if not impossible, to trace an individual fruit back to its source.

Saeed Kamali Dehghan "Are Mexican avocados the world's new conflict commodity?" in The Guardian online 30 December 2019 https://www.theguardian.com/global-development/2019/dec/30/are-mexican-avocados-the-worlds-new-conflict-commodity

₪ ₪ ₪

More on avocados

"Millenials, rejoice! Supermarkets in Germany and Denmark are stocking avocados sprayed with an edible coating that keeps them fresh for longer."

One-sentence news brief in "Working hypothesis" in New Scientist 14 December 2019, p. 21 (no source cited)

₪ ₪ ₪

Farming goes underground

Underground farming is the new thing in New York, London and Paris. In the French capital, 58% of households do not own a car, the city council discourages driving while promoting public transport and so is looking for new uses of the vast underground spaces in the city. Since 2016, the town hall's *Pariculteurs* programme has offered up underground parking lots, rooftops and courtyards to businesses willing to turn them green, who can compete in a public call.

Left: Cultivated shitake mushrooms, Author Pardejoniensis, Wikipedia "Fungiculture", Creative Commons; Right: Endives with roots, Wikipedia FR "Endive", Author Rasback (assumed), Creative Commons

In fact, Paris has a history of underground farming: in the 19th century, *champignons de Paris* (button mushrooms) were grown in the abandoned quarries below the city. In 2020, with the Cycloponics company farm, La Caverne, and already have an output of 100-200kg of mushrooms a day, including shitake. La Caverne is, for the moment, the only subterranean agricultural operation in Paris, housed in 9,000 square m of a disused multi-storey parking lot. Another prime product is their endives, a perfect crop for underground farming. Reportedly discovered by a Belgian farmer who tried to hide chicory roots from the taxman in his cellar only to find they grew delicious, tender leaves while they were down there, endives are now the fourth most popular vegetable in France. However, the "atmosphere" for mushrooms and endive are different, since the former require autumnal conditions of damp.

Controlling the temperature is one of the major advantages of underground farming, but the disadvantages include frequent water leaks, hauling the farm's waste up to

ground level for disposal and Herculean efforts to keep it all clean to the standards required for organic certification.

Many experts predict that, if the world is going to feed 9 billion people by 2050, agriculture will have to move underground, and there are plans to test converting the 12.5 square km of abandoned mines in the UK into farms. Clapham, in south London, is home to Growing Underground, a massive hydroponic operation in a second world war air raid shelter using LED lighting to grow herbs, microgreens and salad leaves. A decade ago, the lighting available would have made the tunnel too hot to grow anything. With limited agricultural land, growing food underground could provide much-needed space for people, as in China, where vast swathes of land are too contaminated to farm and many people are being sent to the big cities to live, leaving fewer farmers to grow food.

Debate on the subject is rife. Paris will probably never be able to feed itself entirely, no matter how many rooftops or carparks are converted into farms. The popularity of locally grown produce already outstrips the local land available for farming and there is not enough space available in the city to supplement that at a reasonable price. Meanwhile, the movement continues, as in London, where farming may be on rooftops, on Thames barges or in bunkers, aiming at complementarity.

Megan Clement "Old MacDonald had a carpark? The urban farms growing in unlikely places" in *The Guardian* online, 17 December 2017, https://www.theguardian.com/cities/2019/dec/17/old-macdonald-had-a-carpark-the-urban-farms-growing-in-unlikely-places

₪ ₪ ₪

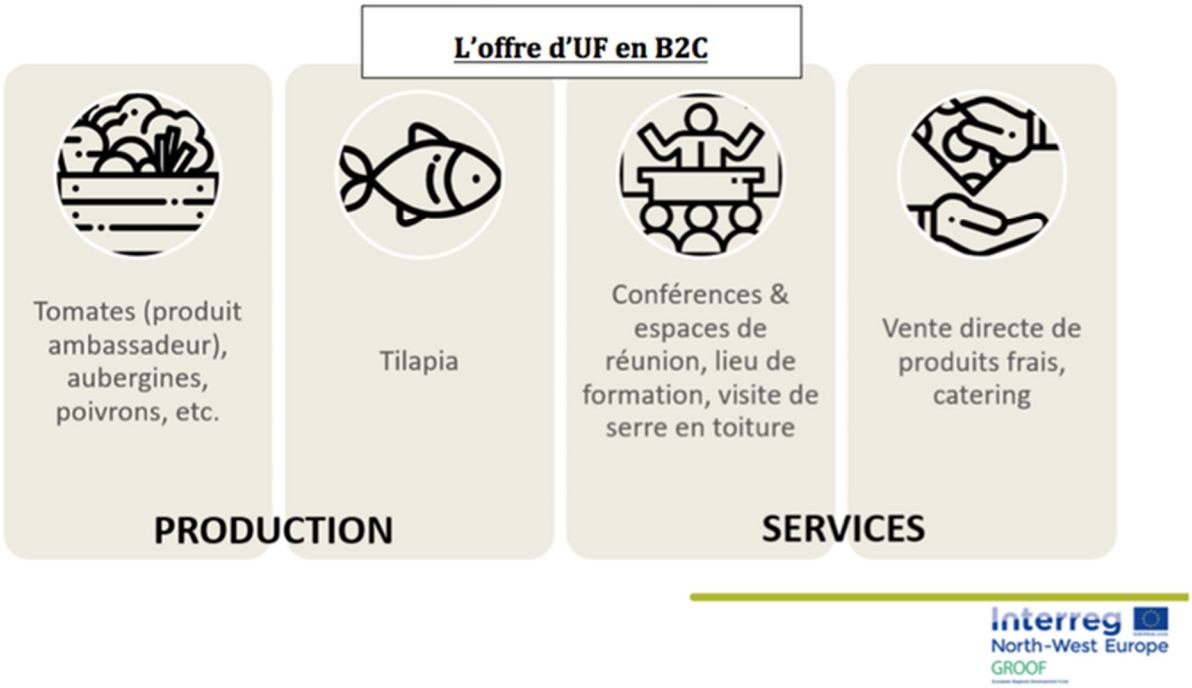
Europe biggest urban farm in 2016 goes bust – what happened?

In 2016, multiple article announced the opening of a rooftop greenhouse with fish farming on the floor below in a disused office in The Hague as the new age of urban agriculture producing tomatoes, vegetables and trendy "microgreens" with hopes of serving 900 local families. Alas, UF002 De Schilde, among the largest rooftop greenhouses in Europe in The Hague, underwritten by the pioneering – and highly experienced – Swiss UrbanFarmers company, went bankrupt in July 2018. It's aquaponics production systems under 1,200 square m relied on the synergy between vegetal output and fish farming of tilapia. What went wrong?

The authors' inquiry revealed that the failure was due to the company's strategy, a lack of understanding between the shareholders and technical production problems. The Swiss-Dutch combination led to cultural and economic misunderstandings. The B2B (business to business sale to processors) did not scout out restaurants and office canteens sufficiently, with only a dozen on board, sale prices too high, quality not corresponding to expectations, short-circuit

distribution not well-adapted to storage – in a nutshell, the produce did not look good enough. When the rooftop farmers attempted to switch to direct sale to consumers (B2C business to consumer), they diversified:

UF002 Offer as B2C (business to customer)



Tomatoes (Ambassador Product), eggplant, peppers, etc.	Tilapia	Lectures & meeting spaces, training sessions, rooftop operation visits	Direct sales of fresh products, catering

But this B2C failed, as well, for three reasons: local customers did not sign on in sufficient numbers, the up-market offer could not go over in one of the Netherlands most economically modest areas and there was a lack of understanding about competition with local producers who could provide tomatoes, for example, at far lower prices, and – for the tilapia, a high-cost exotic in the area – the local abundance of familiar sea fish.

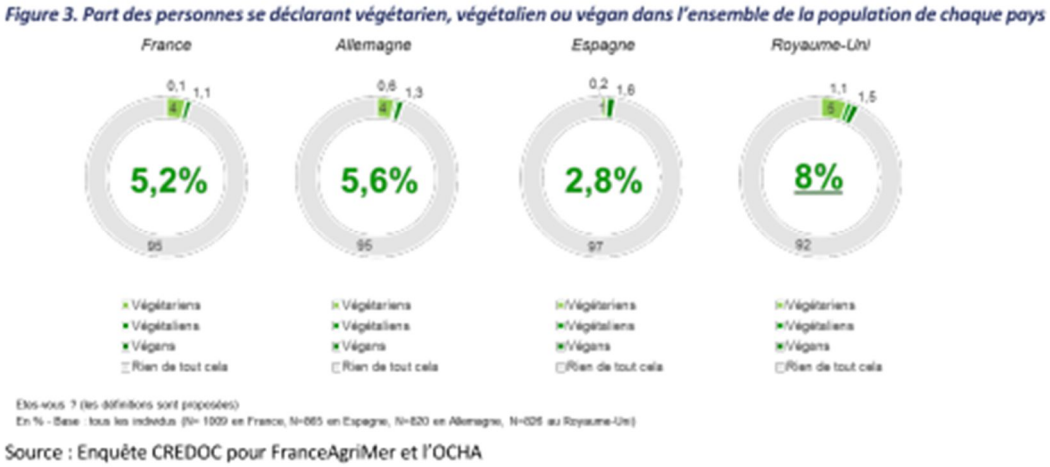
Added to this is the technical challenge of aquaponics plant-fish production in the crucial start-up period requiring high yields with – in this case – not totally mastered new tech, so their yields likewise could not compete with local commercial farming. Aquaponics also requires highly qualified personnel not available locally, plant-growing on a multi-layer plastic surface, high energy needs with problems over the energy and CO2 exchange, as well as the difficulties accessing the rooftop. The starting team had all the ingredients, but internal dissension caused nearly all of them to leave the project. It did not help that the central office in Switzerland went out of business some months before kick-off, which weakened the Dutch company considerably and, as the sales figures mounted, so did the losses, with too many salaries to cover. With a margin of 20%, they needed to sell 80% of production minimum – a widely recognized challenge to these innovative production modes.

So, what have we learned? 1) look carefully at the local environment to analyze needs; 2) internal management requires cohesion and a long-term vision that will protect projects in the course of strategy changes, when they are necessary; 3) mastery of technical requirements for qualified personnel and immediate high yields. Urban agriculture remains an excellent "window" for the image of agriculture among consumers, but they must not see it as a dream that is condemned to fail.

Senay Boztas "Greenhouse in the sky: inside Europe's biggest urban farm" in *The Guardian* online, 27 April 2016 https://www.theguardian.com/cities/2016/apr/27/inside-europes-biggest-urban-farm

Nicolas Ancion and Guillaume Morel-Chevillet "**Agriculture urbaine : les leçons de la faillite d'Urban Farmers à La Haye"** 27 November 2019, https://theconversation.com/agriculture-urbaine-les-lecons-de-la-faillite-durban-farmers-a-la-haye-126885. **NB the authors give permission to reproduce their articles**: "Nous croyons à la libre circulation de l'information. Reproduisez nos articles gratuitement, sur papier ou en ligne, en utilisant notre licence **Creative Commons**. " See complete article online: Maria Rosa Rovira Val, Franz Schreier, Boris Solecki, Nicolas Zita, Nathalie Crutzen and M. Haïssam Jijakli (co-authors) at https://orbi.uliege.be/handle/2268/241639

₪ ₪ ₪



Breakdown analysis of percentage of vetarians, vegetalians, vegans in France, Germany, Spain and the United Kingdom

CREDOC Study: How Many Vegetarians in Europe? (FR)

Although the question in the title is about Europe, the countries studied are France, Germany, Spain and the United Kingdom, with fine-honed results in both qualitative and quantitative analyses. There are helpful definitions of vegetarian, vegetalian, vegan and flexitarian, a survey of the historical development of each category and their frequent overlap, in truly French manner, an outline of the philosophical debates both currently and historically, detailed information on how the survey was carried out through the inquiries and polling methods. There are subject studies such as on generational breakdown, details on protest movements, orthorexia (obsession with eating foods one considers healthy), the impact of stockbreeding on humans and the environment (especially the links between beef production and climate change), animal welfare and how it is understood, the impact of meat consumption on human health, a decrease in meat consumption due to its price for poorer households and the "multi-factorial" aspect of the trend. Each contributing country is analyzed for the major concerns in order of importance. The general conclusion of the report is that it remains hard to measure development and direction of this phenomenon on a European scale, because it is still so marginal numerically. However, the impact on

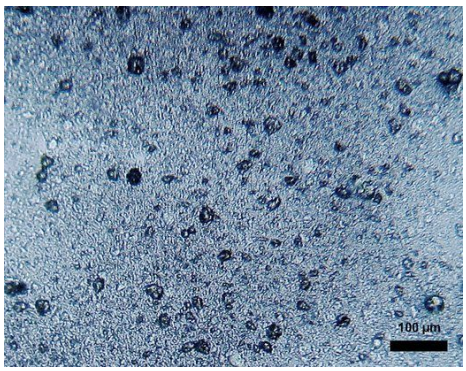
production and stockbreeding makes the subject of paramount importance for orienting national policies in agriculture.

CREDOC pour FranceAgriMer 2018 "Combien de végétariens en Europe?" in *Panorama de la consommation végétarienne en Europe – synthèse FranceAgriMer* / Édition octobre 2019 Weblink : https://www.ethnozootechnie.org/IMG/pdf/_cle0fcd21-215.pdf

₪ ₪ ₪

Can we have our plastics and *not* eat them, too?

It seems that the world has seen 8.3 billion tonnes of plastic produced in history, 5 billion tonnes now in landfills or discarded into the environment, an estimate of 68,000 microplastic particles falling on what we eat in a year, 700 billion microplastic particles generated by an average household in a year, and – to mention the gastronomic pleasures involved – 800 microplastic particles in a portion of mussels. Although many plastics seem to lead to the sea through breakdown of litter, the leading sources are from synthetic textiles in clothing, followed by types, city dust, road markings, coatings on ships, personal care products and plastic pellets, with a big drop in quantities between the "big three" and road markings.



Left: Polyethylene based microspherules in toothpaste, Wikipedia "Microplastics", Author Dantor (talk) 20:55, 18 November 2013 (UTC), Creative Commons; Right: Photodegraded plastic bag adjacent to hiking trail. Appx 2,000 pieces 1 to 25 mm. 3 months exposure outdoors, Wikipedia "Microplastics", Author Stevejewett, Creative Commons

If big plastic debris has been on the radar for years now, all plastic is non-biodegradable, so the microplastic nuisance is now coming in for intense study. The effect on human health is an open question, as indicated by the SAPEA consortium of scientific academies from across Europe and other academic studies. A University of California study on all plastic ever produced provides the estimate of 8.3 billion tonnes, with 5 billion tonnes in landfill or the environment – the latter being the supposed weight of the Great Pyramid of Giza. On the yet smaller scale, nanoplastics come in various shapes from blob to shard to outright pointed that make it difficult to even find in examining humans and animals, who may ingest or inhale them. Scientists do not yet know if microplastics can enter the bloodstream or affect the immune system. They also contain plasticisers and flame retardants, as well as environmental contaminants such as hydrocarbons, pesticides or metals and most particles are surrounded by an "eco-corona" of organic matter and micro-organisms, so that each particle has its own "personality" – "fiendlishly hard to study".

Suggestions for what to do in the meantime are already in the headlines: ban single-use plastic items, microbeads from toiletries and cosmetics (about 10% of the microplastics entering the sea from rivers), switch to other re-usable materials that either biodegrade, are convertible or can be used as energy sources.

Graham Lawton "Plastic measures" in *New Scientist*, Vol 244 N°3259, 7 December 2019, pp.38-41.

₪ ₪ ₪

Plastic addiction

The *National Geographic* has devoted a photo essay and more statistics to this hot topic: 1 million plastic beverage bottles bought every minute world-wide with very low recycling rates, 24.2 billion pairs of shoes produced in 2018, hard to recycle because of their multiple components, 1 billion toothbrushes discarded in the United States in 2019, 60 million tires rotting in landfills that already shed micro-particles of plastic-rubber while traveling, 3 trillion cigarette butts with mainly plastic filters, 10 thousand sanitary pads or tampons discarded by the average American woman over a lifetime, not to mention the rolls of plastic food wrap.

There is a historical side to all this: tires had plastic included in 1909, plastic was added to toothbrushes and plastic wrap arrived in the 1930s, plastic cutlery was first made in the 1940s, plastic was added to tampons, shoes and cigarettes in the 1950s, and plastic bottles first arrived on the scene in 1973.



Left to right: A selection of plastic disposable tableware, Wikipedia "Disposable tableware", Creative Commons; Assorted new automotive road tires, showing a variety of tread patterns, Wikipedia "Tire", Author HopsonRoad (Stephen Flanders), Creative Commons; Three plastic toothbrushes, Wikipedia "Toothbrush", Author Jonas Bergsten, Creative Commons

Better to act than to despair, as you can do something to help: 1) use biodegradable or compostable disposable cutlery or find reusable substitutes and favor eating places that agree with you. 2) favor recyclable aluminum cans over plastic bottles. 3) try bamboo toothbrushes with compostable handles, use toothbrushes with a replaceable head and ask your dentist to pay attention to you. 4) repair your shoes, buy fewer of them and donate rather than discard. 5) cut car mileage by carpooling, make sure old tires are recycled, try public transportation. 5) do throw cigarette butts into litter bins, try rolling your own cigarettes, use only recyclable e-cigarettes. 6) switch to menstrual cups or reusable sanitary pads, choose tampons without plastic applicators (cardboard still exists), try out reusable menstrual underwear. 7) switch from plastic to reusable beeswax wrap, store leftovers in glass containers, avoid buying food in plastic wrap.

Lori Cuthbert, photographs by Hannah Whitaker, "Our Addiction to Plastic" in *National Geographic*, December 2019, pp.68-82.

₪ ₪ ₪

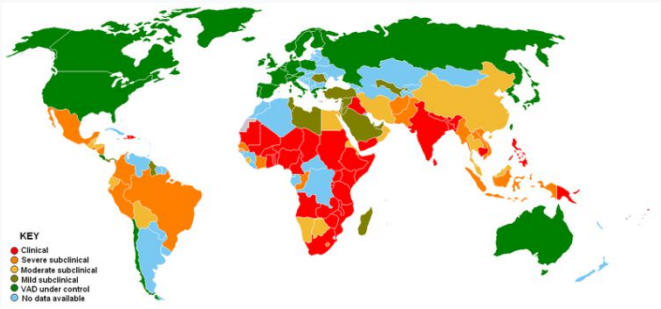
Nutrient pods to combat poor diet

For people suffering from malnutrition – some 2 billion people globally – it is the leading cause of cognitive and physical disorders. A major challenge to adding nutrients to food is that they are destroyed by cooking or add a bad taste to foods. Now, microscopic particles under a millimeter in diameter can hold 11 different nutrients individual or up to 4 together. The "envelope" are resistant to heat, light and moisture, but disintegrate in stomach acid. Added to bread, they increased iron levels in blood and the same micro-pods may also be used to deliver therapeutic drugs.

Layal Liverpool "Minute nutrient pods could tackle poor diet" in *New Scientist*, Vol. 244, N°3257, 23 November 2019, p.18.

₪ ₪ ₪

Golden rice again



Left: Golden Rice grain compared to white rice grain in screenhouse of Golden Rice plants, Wikipedia "Golden rice", Author International Rice Research Institute (IRRI), Creative Commons; Right: Prevalence of vitamin A deficiency. Red is most severe (clinical), green least severe. Countries not reporting data are coded blue. Data collected for a 1995 report, Author Petaholmes, declared public domain by author, Wikipedia "Golden rice"

After long and bitter debate, GMO gold rice to prevent vitamin A deficiencies has received regulatory approval and is green-lighted for production in Bangladesh. The human body makes vitamin A from beta-carotene, the pigment in carrots and sweet potatoes, but many people eat little but rice and the vitamin A deficiencies cause blindness, weaken the immune system and kill over half a million children a year. Unveiled in 1999, golden rice met with fierce resistance, especially in over-nourished countries. Early strains did not produce enough beta-carotene, but that has been remedied. Claims that the Food and Drug Administration said golden rice had no nutritional value were based on the slewed statement that it hardly mattered in the US, because rice was not widely eaten. Contemporary legend said it broke down into carcinogenic components, false, but the battle will continue.

Michael LePage, "Golden prospects" in *New Scientist*, Vol. 244, N°3257, 23 November 2019, p.23

₪ ₪ ₪

Hooked on "hyperpalatable" foods?

Spaghetti *aglio, olio e peperoncino*, ail, huile et piment (Spaghetti with garlic, oil and peppers), Author Elga Cappellari, Wikipedia FR "Spaghetti", Creative Commons

Much ink spilled and emotion expressed over the so-called "hyperpalatable" foods, supposedly designed to trigger a "bliss point", another hot subject amplified by social media that attributes the obesity epidemic to them in great part. But, is any of this backed up by scientific studies? That is James Wong's job – debunking contemporary myths about science. First of all, there has been little effort to define "hyperpalatable", even in academic literature. Now a University of Kansas team is setting the criteria for a definition for the first time, trawling through thousands of studies and they have identified three clusters that match the

often nebulous descriptions: foods in which over 20% of calories come from both fat and sugar (cakes, cookies and pancakes), which is hardly a surprise. Second, foods with more than 25% calories from fat + over 0.3% sodium (from salt) by weight, mainly bacon, omelettes and cheesy dips. Finally, foods with over 40% calories from carbs and 0.2% or more sodium by weight, like pasta and breads. So, the narrative of hyperpalatability is more a bogeyman than new news. Wong counsels prudence: the whole field of research *is* new, with a 550% increase in published papers in the past 20 years, so there should be more – and more reliable – "news" to come.

James Wong "Food that gets you hooked" in *New Scientist*, Vol. 244, N°3257, 23 November 2019, p.24.

₪ ₪ ₪

Chiller Bees – accelerated evolution

Killer bees terrorized South and North America and have now evolved into a beacon of hope in Puerto Rico in just a decade, losing their famed aggressive behavior. After the 2017 Hurricane Maria tore through the island, beekeepers leapt to rescue their bee survivors, because they are anything but ordinary – once feared, they are now docile and highly productive honey-makers, even perhaps holding the key to breeding resistant bees in the future. Rescuers even used a helicopter to evacuate surviving beehives from telephone wires.

Flash back to 1956, when Tanzanian lowland bee queens in the subspecies, *Apis mellifera scutellata* were imported to Brazil for a hybrid breeding program, but some escaped into the rain forest, then became dominant, then began their wave of advance in every direction, ferociously inflicting mortal stings on human and beast, four of whom died in the first three years, not due to toxicity, but to multiple stings. This provided a heyday for Hollywood horror films and the bees spread to 20 countries on two continents.

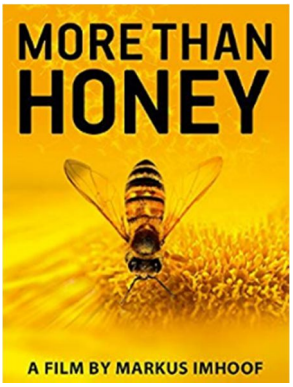
Adult *Apis mellifera scutellata* in Florida, Author Jeffrey W. Lotz, Florida Department of Agriculture and Consumer Services, Bugwood.org, Wikipedia FR "*Apis mellifera scutellata*", Creative Commons

Today, in Puerto Rico, scientists are trying to understand what drove this change from fierce to near-friendly – a habitat with few predators but scarce resources so that the bees adapted to favor energy efficiency, fat storage and skillful hoarding? A high human population unwittingly selecting by destroying aggressive hives? Today, the consensus is for convergence of the two + the good luck that the bee population has retained high genetic diversity and is resistant to colony collapse. Beekeepers and scientists agree that it is unwise to export the Puerto Rican bees – far better to study their adaptability to breed more resistant and productive bees elsewhere, "triangulatiung" among Puerto Rican, European and African populations.

When bees produce eggs and sperm, their genes are more effectively shuffled than in other species and mutation rates are high, also a disadvantage in many animals species, but bees have a trump card – their haplodiploid sex system. Male drones develop from unfertilised eggs and have only one set of chromosomes, so they are haploid. Female workers develop from fertilised eggs and have both sets of chromosomes, and so are diploid. The queen is the only fertile female in the colony and mates with about 12 to 20 males to produce the hive's population. Because drones only have one set of her chromosomes, any harmful mutations that arise have no alternative versions of the genes to counteract the bad ones. So, if one of the

hive's lines of descendants mutates too far, the drones it produces will die or be unable to mate, removing the line from the gene pool. This constellation creates high diversity in colonial insects, allowing them to respond rapidly to changes in the environment. In Puerto Rico, the environment seems to have favored active foragers over aggressive individuals and the drive to change was so strong that it happened in just a few years. However, this does not change the fact that bees and their ilk are threatened world-wide by environmental change.

Ben Turner "How killer bees evolved into chiller bees in just one decade" in *New Scientist* online, 21 August 2019 issue.

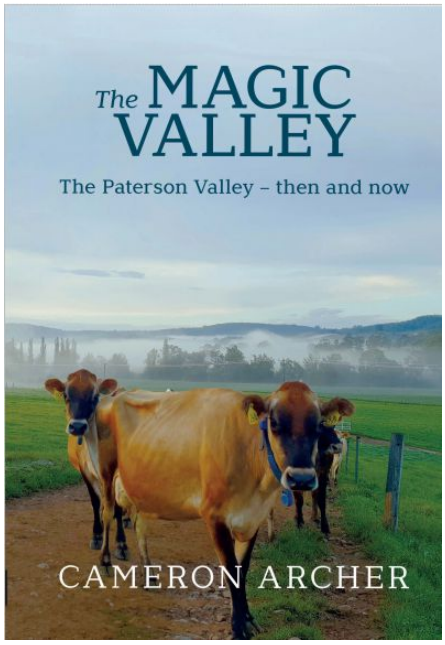


Killer bees might become the hope of the future

This once improbable-seeming hypothesis was expressed by a far-sighted expert beekeeper and scientist in the prize-winning film by Markus Imhoof, *More Than Honey*, (DVD, 2012) summarized in Newsletter N°13, Part 2, and still well worth watching for more than killer-to-chiller reasons.

Resources
Classic and Current

The Magic Valley – environment on the move



Cameron Archer *The Magic Valley – The Paterson Valley – then and now*, ACA Books, 2019, 410 pp.,

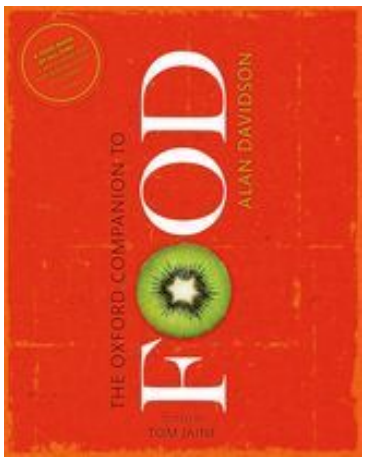
The Magic Valley is a detailed study compiled over 40 years living and working in the Paterson Valley near Sydney, News South Wales, Australia. It analyses the relationship between humans and their environment, starting with the impacts of Aboriginal land management and how this unwittingly benefitted the invading Europeans and their herds and flocks.

Why is the book called *The Magic Valley*? Because it is seen as being like *The Magic Pudding*, the uniquely Australian children's story about a pudding which immediately replaces the part taken, thus suggesting that it can go on forever. Cameron feels that the Valley has been treated like the Magic Pudding and has also performed like one over the past 200 years. Whether this can continue has occupied his mind over many years.

How has the Valley changed and why? The Paterson Valley has been the source of a diverse range of products and services throughout its 200 years of European exploitation. The reader is taken through the rise and fall of many industries. The book challenges the question of long-term sustainability and what the future may hold.

An essential read for anyone with an interest in the Australian landscape and environment with discussion of the agricultural and stock-breeding roles of the area as they waxed and waned over time, from corn to wines, the enormous emphasis on dairy production with livestock from pigs to poultry as well as including rural activities such as turf production and today's efforts by farmers to eke a livelihood out of multi-activity.

The Oxford Companion to Food – expertise and humour combined

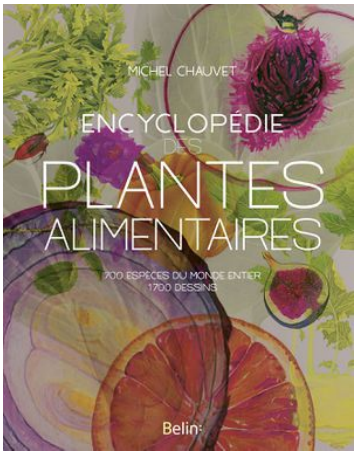


The "Companion", famous for its combination of food history, culinary expertise and entertaining entries has been unique since it was first published in 1999. It contains a nearly exhaustive catalogue of foods, from aardvark (yes, you can eat it) to zucchini and, in passing, the very tongue-in-cheek green cheese "of which the moon was thought to be composed until the contrary revelations of American spacemen in the 1970s. In medieval England it seems to have meant 'new'cheese…." It is always great fun to search for an exotic food to see if Davidson and his roster of authors remembered to include it, as well as to study the articles that are an education in themselves, comparable to an encyclopaedia entry, such as "bread" or "potato". This is one of the major sources for help in beginning a project, with its remarkable bibliographies and multiple authors. Since it has become a mainstay for food studies, the third edition pays particular attention to both updating the text and covering new approaches to food that include anthropological and sociological perspectives, as well as gastronomy, etiquette and the most recent in subjects such as convenience foods, obesity and local foods.

For major agricultural plants such as onions, there are special "boxes" with discussion of the various species and cultivars, how to store or otherwise preserve them, as well as the chemistry of why raw onions "bite" or have a pungent smell. In this case, there is even a tip on how to peel onions without tears, as well as notes on popular beliefs, the origins of the name and its place in Anglo-Saxon riddle. Since the entries are arranged alphabetically and include particular food dishes such as Ice Cream Sundae, Street Food, or places such as Iceland or Sub-Saharan Africa, as well as Sweets and Sweet Potato, the index is limited mainly to common names of plants or dishes, but there is a separate subject index for the larger food categories such as aquatic plants, cereals, fungi and on to cookery books and culture or scientific topics that refer to individual entries. You must look at the articles for more details on regional foodways, planting and harvesting or gathering, the many processes such as nixtamalization that enable using or keeping otherwise toxic foods and much discussion of confusions, as over just what a noodle might be and where. The specially commissioned line drawings give the book its own original touch and a feeling of coherence, as well as often being amusing, and the bibliography has been updated with each new edition.

Alan Davidson and Tom Jaine. *The Oxford Companion to Food* (3rd ed.). Oxford University Press, 2014, 960 pp.,

New Encyclopaedia of Food Plants (in French)



Like the Davidson, this book by Michel Chauvet packs a weighty punch, figuratively and literally (2.9kg). With 3000 entries, 1220 bibliographical references and a record-breaking number of maps about the origin and spread of 557 species, it tackles every sort of edible plant, both cultivated and wild, how long we (or someone) have been eating them, from grains to spices, algae to industrial additives, through 700 food plants around the world. There are all the standards and many you have probably never heard of, such as hairy crabgrass (*Digitaria sanguinalis),* often called Polish millet, on to grain of paradise (*Aframomum melegueta*), a cousin of ginger, also used as an aphrodisiac, or skirret (*Sium sisarum* L.), the Scottish crummock.

Since Michel Chauvet is an ethnobotanist and agricultural engineer committed to defending biodiversity, you will also find the biological characteristics and main varieties, as well as the plants' economic impact, which is not usually addressed in the Davidson. It provides an equally rich bibliography and an index with common names in both French and English (for major plants), as well as binomials, which helps to find each plant entry, with names for the plant in the language areas concerned or in the research work done on them (for example, names for "gum-arabic" in English, French, German, Dutch, Spanish, Portuguese, Italian, Arabic and Wolof). This geographic emphasis is enhanced by the maps showing present distribution, as well as spread from origin areas, so there is as much archaeobotany as ethnobotany, and sections on history, uses, and the varying uses of particular plants as foods, medicinals, or aromatics.

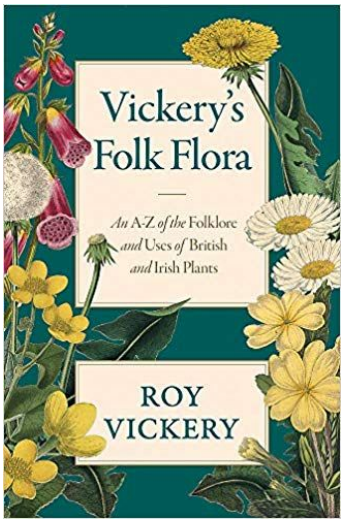
Michel Chauvet, *Encyclopédie des plantes alimentaires*. Paris, Belin, 2018. 880 pp, 1100 colour drawings, 700 line drawings, 350 maps

₪ ₪ ₪

Pl@ntUse (FR and EN)

This website is in many ways complementary to Michel Chauvet's book, *Plantes Alimentaires (Food Plants),* and is a work-in-progress in a Wiki format intended to provide weblinks to many important historical works from Dioscorides to Nabatean Agriculture and plant names in European and other area languages. It is above all an open discussion forum and collaborative website on useful (not decorative) plants and is not intended to compete with Wikipedia or other existing encyclopaedias, but concentrates on web resources. The basic idea is "do-it-yourself", although Michel can advise, if needed. The site was created within the scientific program, Pl@ntnet nd hosted by a consortium called Biowikifarm, composed of several European institutions in natural history, using the Mediawiki software (Wikipedia's software). https://uses.plantnet-project.org/fr/Accueil

Vickery's Folk Flora



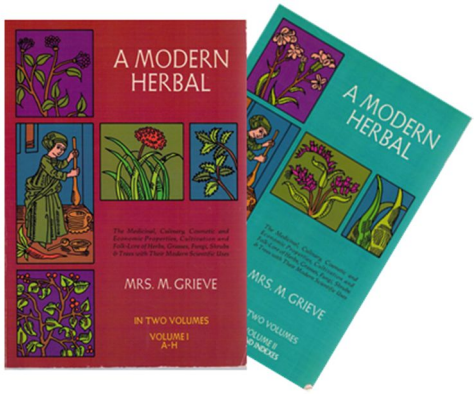
Roy Vickery's *Folk Flora* is mainly about flowering plants, of which he is a specialist, and their connections with popular beliefs, festival, and official traditions, but it often includes the use of plants such as the hawthorn for food (young leaves and haws) and medicinals, or the traditions of nettle as a fibre plant, as well as many that are no longer used as food plants. Like the Grigson* he quotes, it provides rich lists of the many common names for familiar and unfamiliar plants and, when discussing customs, the book often cites traditions that may have originated abroad. Still actively pursuing his inquiries, Roy includes recent and very current information, for example, that the hazel met its nemesis with the introduction from North America between 1876 and 1929 of grey squirrels that eat immature hazelnuts before they are fit for human consumption and recalls that the nuts once provided a useful source of protein and additional income for people living in areas where they were abundant, so that "nutting expeditions" were a festive popular event in themselves. "Nutting" involved considerable horseplay and became a euphemism for courtship, as was rush-gathering. Once valuable plants like the hazel were often "protected" by figures such as goblins or even the Devil. Many such beliefs made their way into song and there are ample mentions to both song and poetry concerning plants, as well as multiple uses beyond food, as hazel was a fine material for wattling and forked twigs helped dowsers find good well sites.

Some plants, like the rowan tree, are especially known for their reputations as prophylactic or protective, which explains why the wood was used for ox yokes, so that no spells could be put on the animals and a rowan tree protected the house from witches, fairies and the evil eye. A simple sprig carried faithfully protected from any hazard, especially ill intentions, and emigrants from the British Isles spread the tree world-wide to plant near their homes. Many plants like rowan or the hawthorn could also be considered unlucky, or lucky at certain times and not at others.

* Geoffrey Grigson *The Englishman's Flora*, London: J.M. Dent & Sons, 1987.

Roy Vickery *Vickery's Folk Flora, An A-Z of the Folklore and Uses of British and Irish Plants*, W&N Weidenfeld & Nicolson, 2019, 888 pp, colour plates, black and white botanical illustrations, plant name (common) index, geographical index, bibliography.

Maud Grieve's *Modern Herbal*



The online free-access version of this book has a note of caution, applicable to any serious publication: "Bear in mind "A Modern Herbal" was written with the conventional wisdom of the early 1900's. This should be taken into account as some of the information may now be considered inaccurate, or not in accordance with modern medicine." Taken with a grain of wisdom in botanical matters, the books are a mine of information with many research leads and often fill out the entries in more recent works, hence the on-going citation of Grieve. The language itself is an education. In many entries, as for rue (*Ruta graveolens* L.), "emmenogogue" means it is thought to have a relieving effect for menstrual pain, or can be used externally as a "rubifacient", that is, to redden the cheeks without cosmetic rouge. (NB *CAREFUL*, over-use can even lead to severe phyto-photodermatitis, hypersensitivity to light that may result in blistering.) Comments run from folklore to foods and teas, on to the use of plants in heraldry. Her quotes of earlier herbalist authors are accurate, although she does not cite references to particular editions and the books do not contain a bibliography. Among the medicinal uses, Grieve often mentions "abortifacient" (abortive), though not for rue, simply cautioning against using larger quantities due to its toxicity.

Note: extract of rue is forbidden for sale in France (except in pharmacies*), always an interesting starting point for research into plant uses, and this is the point where some cross-checking can be fruitful, since **TelaBotanica,** for example, does mention this use of the plant, where the utmost caution is recommended in the Ethnobotanic section.

Tela Botanica

* See Article D4211-13 of the Code de la Santé Publique, August, 2007, for the fifteen plant extracts concerned, sold only in pharmacies, cited at ANSM (Agence nationale de sécurité du medicament et des produits de santé) https://www.ansm.sante.fr/Activites/Medicaments-a-base-de-plantes/Les-huiles-essentielles/(offset)/3 or on the legislation involved at Legifrance : https://www.legifrance.gouv.fr/affichCodeArticle.do?cidTexte=LEGITEXT000006072665&idArticle=LEGIARTI000006913469

*Tela Botanica*on rue (*Ruta graveolens* L.): https://www.tela-botanica.org/bdtfx-nn-58985-synthese

Mrs. M. Grieve. *A Modern Herbal* in Two Volumes (Vol. I: A-H pp. v-427 and Vol. II: I-Z pp. v-902 with index of binomials and index of common names), Harcourt, Brace & Co., 1931, Dover, 1971, black and white illustrations. Hypertext free access at https://botanical.com/botanical/mgmh/mgmh.html with index of recipes and index of poisons. Each plant entry is presented separately.

₪ ₪ ₪

PFAF – Plants For A Future

Long a standard online reference, the PFAF has expanded into a new mission with "Plants to Save the Planet", directed at enabling designers of 'carbon farms' and 'food forests' based on agroecosystems of perennial plants, to choose the most appropriate plants for their requirements and site conditions. This enlists a subset of plants in the PFAF database with the most potential for such designs and involves aligning their resources with strategies being implemented elsewhere for 'carbon sequestration' and 'carbon farming' concentrating on plants growing in tropical and temperate conditions. The 'Plants to Save the Planet' blog at https://pfaf.org/plants/ discusses current debates such as on trees vs. technology, the biomass argument, or edible perennials in home gardens – everything that involves practical action to address the inter-related crises threatening the future of life on Earth.

The classic section of the PFAF is devoted to ecologically sustainable horticulture, so emphasizes how to grow plants and which to choose for the area people live in, with a full list of information on climate zones and natural habitat, plant hardiness, care and hazards, as well as uses from cosmetic to medicinal and edible. https://pfaf.org/user/AboutUs.aspx

₪ ₪ ₪

Photo essays

₪ ₪ ₪

The learning curve at Lauresham Open-Air Laboratory – from oxen to old swine breed

Preparing the field for winter crops. A team of two Raetian Grey Oxen at the Lauresham Open Air Laboratory in Germany is ploughing one of the fields with a (re)constructed Early Medieval ard. In Lauresham various medieval field types (e.g. ridge and furrow) and systems (e.g. three-field crop rotation) are experimented with in order to get a better understanding of the agricultural practice of our forefathers. At the same time these experiments look for valuable resources for more sustainable farming in the 21st century.

Draft oxen training. As part of their Voluntary Ecological Year (in German FÖJ) at the Lauresham Open Air Laboratory in Germany, every year four young adults learn how to train

and work with draft oxen. Daily training and exercise in ploughing during harvesting season offers deep insights into one of the most important agricultural tasks until the beginning of the 20th century: working with draft cattle.

…

Düppeler Weideschweine braking a fallow at the Lauresham Open Air Laboratory in Germany. In 2019 at a meeting at the Archaeological Open Air Museum Oerlinghausen, three museums (Museumsdorf Düppel just outside Berlin, Lauresham Open Air Laboratory and Oerlinghausen) and one farmer joined forces in order to revive the breeding of the so called "Düppeler Weideschwein", a living (re)construction of the medieval domestic pig. The breed is very robust and can be used for year-round grazing.
For more information, please contact Claus Kropp: c.kropp@kloster-lorsch.de

When work is fun and learning at Howell Living History Farm

It's winter, so take the time out to visit and help with the ice harvest, tap the maple trees to make maple sugar and take a sleigh ride or attend the Sugar Moon Dance (in March). Later in the year, you can "walk" the corn maze. Looking for experience with working animals? Then apply for an internship in small farm education, or public history and museum operations. Photos Pete Watson http://www.howellfarm.org/

A horseman talks about his donkeys

From Luxemburg, Pit Schlechter sent a note about his two donkeys – they are Zamorano-Leones, a Spanish breed that is indeed related to the Poitou donkeys (although the Poitou breeders avoid talking about it, even if they sometimes go and get stallions from there). It took me a very long time to learn how to communicate, as they are really extremely different from horses. But finally I succeeded more or less, as you may see on the pictures. Pit Schlechter FECTU (European Federation for Draft Horse Use and Promotion)
https://www.fectu.org/

Pit and Marie-Jeanne en route and apple harvest transport

Join the AIMA via PayPal

Membership forms and Paypal are available online in English, French, German, Russian and Spanish on the AIMA website under the heading JOIN US!
Individual membership €10, Institutional membership €40.
https://www.agriculturalmuseums.org/membership/application-forms/