

The Monsanto Tribunal is an international civil society initiative to hold Monsanto accountable for human rights violations, for crimes against humanity, and for ecocide. Eminent judges will hear testimonies from victims, and deliver an advisory opinion following procedures of the International Court of Justice. A parallel People's Assembly provides the opportunity for social movements to rally and plan for the future we want. The Tribunal and People's Assembly will take place between 14 and 16 October 2016 in The Hague, Netherlands.

Written testimony to the Judges of the Monsanto Tribunal

The poisoning of our Nature Reserve by Roundup® and many independent scientific papers that confirm the losses of biodiversity globally

It is almost impossible to describe in words the ten-year period since we first established our small nature reserve, so I have sent over two photo-journals for the Judges to examine: **Speckled Bush Crickets** and **The Year of the Bumblebee**. I quote from the first paragraph of my article published in the Institute of Science in Society in September 2014: How Roundup® poisoned my Nature Reserve. *"In March 2006, UK's Natural Environment Research Council announced the closure of its wildlife research centres, a decision opposed by 99% of 1,327 stakeholders. Monks Wood Centre, which hosted BBC's Springwatch, pioneered work on DDT and pesticides in the 1960's and more recently revealed how climate change is affecting wildlife, with spring arriving three weeks earlier. The research centres were also involved in assessing the impacts of GM (genetically modified) crops on wildlife, with findings contradicting industry claims that no harm would be caused. In response to that and the unexplained disappearance of birds and invertebrates (such as bumblebees, honeybees and other pollinators), we set aside one acre of the field next to our house in South Wales to make a chemical-free nature reserve"*.

It is not only bumblebees and bush crickets that we have been losing. We have hundreds of photographs of beetles, moths, butterflies, hoverflies, dragonflies, damselflies and spiders on our computers and physical albums of pictures of moths, butterflies, orthoptera, bumblebees, hoverflies, wasps, dragonflies, damselflies and pond life that we made up in the early days for identification purposes---but not always identified!

Explanation of the life of bumblebees for the Judges

The life cycle of a bumblebee differs greatly from that of a honeybee. Only the mated queen survives the winter. The rest of the colony dies. The new queen goes into hibernation any time after July with honey stores. She emerges some time in February/March, depending on the species, and searches for a nesting site. She will lay her eggs and the first to hatch are workers. They will then take food back to the nest and some cells will produce males and others new queens. The males will hatch first then the queens, usually July/August.

Our reserve had six species of bumblebee to begin with: *Bombus pratorum* (early), *Bombus terrestris* (buff tail), *Bombus lucorum* (white tail) *Bombus hortorum* (garden bumblebee), *Bombus lapidarius* (red tail) and *Bombus pascuorum* (common carder bee). The *B. pascuorum* and *B. hortorum* both have long tongues; that means they are able to forage from long flowers; that presumably must have a survival advantage.

Decline of the Red Tail bumble bee over 10 years

I have chosen this bumblebee to illustrate the decline because queens, males and workers are easy to distinguish from each other; and we found them the most beautiful to observe. In July 2010 emerging red tail queens had their favourite flowers: Teasel, Scotch Thistles and Greater Knapweed on which they fed (and roosted) almost exclusively. In 2010, we found up to six of them on a Teasel, moving round the heads. They started to decline with increasing levels of glyphosate. In March 2016 we only saw one red tail queen and July/August we saw no new queens, only males. Prof Gilles-Eric Séralini who has done 30 years of research on glyphosate and won the German Whistle blower award 2015, says that not only is Roundup® an endocrine disruptor, but a nervous system disruptor as well.¹ The Whistle blower Award citation: “He was the first to publish animal test results demonstrating the toxic and carcinogenic properties of the most commonly used herbicide worldwide, the glyphosate-based “Roundup” by carrying out a two-year feeding test on rats. After the research was published, Prof Séralini was attacked by a vehement campaign by ‘interested circles’ from the chemical industry as well as the **industry-financed British Science Media Centre.**”

Other species that have declined or completely disappeared

Eight species of shield bug, ladybirds and their larvae and pupae had gone, plants we had grown as food plants for moths and butterflies were uneaten, aphids had gone, the orb-web spider *Araneus quadratus* whose life history and mating we had witnessed, four types of bush cricket and many dragonflies. Outside our reserve Ragwort leaves used to be stripped by cinnabar moth caterpillars. This year we have seen few cinnabar caterpillars and most Ragwort is intact.

What we concluded from our observations over 10 years

Bumblebees: The red tail bumblebee (*B. lapidarius*) is the most sensitive to Roundup® and has probably completely disappeared from the reserve. The carder bee (*B. pascuorum*) is the least sensitive and is still present in reasonable numbers. It still feeds on the *Chelone obliqua* (turtle-head) for which it requires a long tongue, but we have only seen three *B. hortorum* feeding from it at the beginning of its flowering period. In 2010 the ratio of carder bees to *hortorum* taking pollen and nectar from *Chelone* was about two to one.

Solitary bees: Our solitary bee hotel was full in July 2015. July 2016 it is empty.

Scientific papers: In an article in August 2016 edition of *Nature Communications* neonicotinoid insecticides have been found to have a negative impact on wild bee species over an 18-year period in England.² We have no crops grown with

¹ http://www.gmoseralini.org/wp-content/uploads/2015/11/Seralini-career-IBPC_2015.pdf

² <http://www.nature.com/ncomms/2016/160816/ncomms12459/full/ncomms12459.html>

neonicotinoids applied: the only biocide present in the vicinity is glyphosate sprayed on Japanese knotweed. Dr Christopher Connolly also pointed out on the Science Media Centre website that they hadn't considered glyphosate.

Moths: Between 2006 and 2010 we had moth caterpillars feeding from food plants that we had specifically grown for them on the reserve; e.g. mullein moths on Greater Mullein and Figwort, Great Willow Herb for Elephant Hawk Moth caterpillars. These plants have been uneaten for several years.

Butterflies: Our total count of species for 2010 (20) transiently increased to 22; but then decreased rapidly. In 2016 we mostly have white butterflies laying eggs on our sprouts; the coloured ones that used to be plentiful only appear in ones and twos; several are no longer present.

Scientific papers: Butterflies have been studied in North California since 1972. The numbers started to decline in the mid-1990s and the authors correlated it with amounts of neonicotinoid insecticides applied.³ But glyphosate has also been applied to US farmland in conjunction with GM crops. Usage of glyphosate has increased 15-fold in the last 20 years since GE Roundup Ready crops; nearly 75% of that has been applied in the last 10 years. But, as in Britain and Europe, the USGS National Water Quality Assessment Program (NAWQA) does not monitor glyphosate levels in groundwater. However the Journal of the American Water Resources Association 2014 reported: *"The most comprehensive research to date on environmental glyphosate levels exposes the widespread contamination of soil and water in the US, as well as its water treatment system. Looking at a wide range of geographical locations, researchers from the USGS analysed 3,732 water and sediment samples and 1,081 quality assurance samples collected between 2001 and 2010 from 38 states in the US and the district of Colombia. They found glyphosate in 39.4% of samples (1,470 out of 3,732) and its metabolite aminomethyl-phosphonic acid (AMPA) in 55% of samples."*

In February 2015 the US Center for Food Safety produced an 88-page Report: Monarchs in peril: Herbicide-Resistant Crops and the decline of Monarch Butterflies in North America. *"Unlike many other weed killers, once absorbed it (glyphosate) is translocated (moved internally) to root tissue, where it kills milkweed at the root and so prevents regeneration. The increasingly common practice of growing Roundup Ready crops continuously on the same fields means that milkweed is exposed to glyphosate every year, with no opportunity to recover. In 1999, common milkweed was found in half of corn and soybean fields, but only 8% of them a decade later."* Roundup® has acted on the invertebrates on our reserve as a **biocide**, not just as a herbicide removing food plants.

Another paper has shown that clothianidin, a long-acting systemic neonicotinoid insecticide, contributes to the decline of Monarch Butterflies.⁴

Dr Peter Lundgren was a Whistle blower like Prof Séralini: his name was removed from the paper. A footnote at the end from the now sole author acknowledges that Dr Lundgren contributed equally to the research: *"Dr Lundgren is an entomologist employed by the USDA Agricultural Research Service (ARS). However, the ARS has required Dr Lundgren to remove his name as joint first author from this article. "I believe this action raises a serious question*

³ <http://rsbl.royalsocietypublishing.org/content/12/8/20160475>

⁴ <https://www.sdstate.edu/nrm/publications/upload/Pecenka-and-Lundgren-2015.pdf>

concerning policy neutrality toward scientific inquiry.” **That is a polite way of putting it: that conflicts of interest impede scientific truth-telling today.**

Spiders: The orb-web spider, *Araneus quadratus* had vanished by 2011. Spiders have a complex neurological system to spin spider webs, for locomotion, prey capture, reproduction and development. In fact we have seen few spiders since; in 2016 we have found only two funnel-web spiders (*Agelenidae*) in the whole reserve. There may be more; autumn is spider time!

Birds that feed their young on invertebrates: Starlings, sparrows, swallows, house martins, swifts and skylarks have also declined massively in the area since 1979 when we moved into the house. The sound of the cuckoo, the harbinger of spring, is no longer heard.

Bats: In 1979 when we moved in bats were plentiful around the area. In 2009, I still detected a few when following speckled bush crickets at night along hedges with a bat detector. In 2016, on a summer evening at dusk, we are lucky to see (or hear with a bat detector) even one bat.

Scientific papers: When Stahlschmidt & Bruhl analysed insecticide residues in food items in an apple orchard in Germany in 2012, they found that EFSA, in their pesticide risk assessments, do not consider bats as a separate species; insectivorous mammals are represented by the generic indicator species ‘shrew.’ As the authors observe, bats and shrews are very different. Bats feed on a wide range of flying insects and arthropods that they take from the tops of trees; they are long-lived with low reproduction rates and they have hibernation periods in which lipophilic pesticides can accumulate. The US bat populations have plummeted due to a fungal disease, White Nose Syndrome. There are extinctions of some species. Since the UK wildlife research sites were closed in 2006, a single Defra veterinary scientist has been put in charge of analysing dead bats sent in by the public. There are few in number. The British system of monitoring is a far cry from the US Fish and Wildlife Service! Was that one reason to turn wildlife research into a computer science, with population biology and mathematical modelling, as opposed to field science? In 2012, NERC proudly announced the Globolakes project, the first satellite-based global surveillance system, to monitor how lakes and reservoirs are being affected by environment change. Can biodiversity losses and pesticide levels be measured from space?

The USDA and the USDA ARS are allowing Monsanto and DuPont’s GM crops to produce biological deserts – surely they must have noticed?

Craig Childs confirms it in his book Apocalyptic Planet: Field Guide to the Future of the Earth.⁵ The State of Iowa was just one area in which the US Geological Survey reported widespread contamination of soil, air, rainwater and river water with glyphosate and its longer-acting metabolite AMPA (α -amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid).⁶

Grundy County Iowa was where Craig Childs spent a long weekend in a monoculture of GM “Roundup® Ready” corn looking for wildlife. *“I listened and heard nothing, no bird, no click of insect. Mr Owen was the farmer who had given*

⁵ <http://houseofrain.com/bookdetail.cfm?id=1344621970977>

⁶ <http://onlinelibrary.wiley.com/doi/10.1111/jawr.12159/abstract>

us permission to backpack across his cornfields. He grew a combination of DuPont and Monsanto stock. We were in DuPont now. It didn't look any different to me."

Robert Krulwich blog:⁷

Corn farmers champion corn. Anything that might eat corn, hurt corn, bother corn, is killed. Their corn is bred to fight pests. The ground is sprayed. The stalks are sprayed again. So, Craig wondered, "What will I find?" The answer amazed me. He found almost nothing. There were no bees. The air, the ground, seemed vacant. He found one ant "so small you couldn't pin it to a specimen board." A little later, crawling to a different row, he found one mushroom, "the size of an apple seed." Then, later, a cobweb spider eating a crane fly (only one). A single red mite "the size of a dust mote hurrying across the barren earth," some grasshoppers, and that's it." Though he crawled and crawled, he found nothing else. "It felt like another planet entirely," he said, a world denuded.

One hundred years ago there was a rich biodiversity of species in the US; now it has gone

Krulwich continues: "Yet, 100 years ago, these same fields, these prairies, were home to 300 species of plants, 60 mammals, 300 birds, hundreds and hundreds of insects. This soil was the richest, the loamiest in the state. And now, in these patches, there is almost literally nothing but one kind of living thing. We've erased everything else.

We need to feed our planet, of course. But we also need the teeny creatures that drive all life on earth. There's something strange about a farm that intentionally creates a biological desert to produce food for one species: us. It's efficient, yes. But it's so efficient that the ants are missing, the bees are missing, and even the birds stay away. Something's not right here. Our cornfields are too quiet."

The background; what we discovered about Roundup®

Swansea is dubbed "*the Japanese knotweed capital of Europe.*" It grows freely in the old mining sites where the ground is disturbed. It has a deep root system and the bushes have spread down the river valleys.

The herbicide Roundup® has been sprayed on this so-called 'invasive' plant in unknown quantities for an unknown number of years in the Swansea area by a contractor Complete Weed Control Ltd. They claim that, according to Monsanto, it is safe and is fully licensed for use by the Chemicals Regulation Directorate.

The Environment Agency refused to monitor glyphosate and Swansea City Council declined to stop spraying Roundup® on Japanese knotweed

Lord Smith refused to monitor glyphosate in groundwater. His senior scientist replied on his behalf on 1st May 2013. "*The GCMS scan is not able to measure glyphosate, and glyphosate is not part of the routine suite of substances monitored for nationally across our network. The main reason for this is that glyphosate analysis is relatively costly and it was felt that the additional costs of analysis could*

⁷ <http://www.npr.org/sections/krulwich/2012/11/29/166156242/cornstalks-everywhere-but-nothing-else-not-even-a-bee>

not be justified. If local glyphosate problems have been identified in groundwater the Environment Agency can carry out operational monitoring at a local level.”

I had pointed out to Lord Smith that the British Geological Survey wrote a Report: Emerging Contaminants in Groundwater⁸ in 2011 using Environment Agency figures. It said that in view of glyphosate’s widespread use and the fact that it was broken down into more toxic metabolites, it should be monitored. Lord Smith ignored this. The Report was never published and BGS became a public/private partnership working with the private sector on hydraulic fracturing (fracking) that the UK public do not want. The High Court in France has banned ‘fracking’ so the French companies are coming to Britain.

Biocheck confirmed that there is glyphosate in river water and tap water

In August 2013, we commissioned Biocheck in Leipzig to analyse water samples for glyphosate. We found that we had glyphosate in tap water and water from the Clyne River of the order of concentrations found in a study in 2013 that showed that breast cancer cell proliferation is accelerated by extremely low concentrations of glyphosate. On 18th September 2013 Swansea City and County Council wrote to our Welsh Assembly Member and told her they wouldn’t stop spraying glyphosate-based products until Defra or the Health and Safety Executive (HSE) instructed them to stop.

I wrote to HSE in February 2014 asking them to instruct the Council to stop

Ms Judith Hackitt (later Dame Judith Hackitt) the then Chair of HSE failed to reply. The CRD Head of Regulatory Policy replied on 28/02/2014 to reprimand me and to defend the authorisation of glyphosate. He told me that the capability to detect individual pesticides in food had increased from 150 in 2003 to 393 in 2012. He stated: *“In the 2012 Report, although there were a large number of residues found in bread, none of these were at a level to suggest a risk to consumer health.”* However, he failed to reply to my question as to why EFSA was regularly increasing the Maximum Residue Levels (MRLs) of glyphosate in foods at the request of Monsanto to accommodate their practice of desiccation of crops and to protect their imports into Europe.⁹

Glyphosate was present in local tap water and Clyne River water in August 2013. A year later in August 2014 local tap water showed a 10-fold increase since 2013: from 30 ppt (parts per trillion) to 300 ppt.

New area of eradication of Japanese Knotweed with Roundup®

At the end of 2014, officials from Swansea Council announced they were going to undertake a 3-year Japanese Knotweed eradication programme starting in April 2015 with Roundup® (*‘while it was still legal’*) in the Ilston Valley. This is a valley even closer to the reserve than the Clyne Valley. In August 2015, we sent them a photograph of the area of the Ilston Valley that had been sprayed in the April, showing that Japanese Knotweed was super weed. New shoots were already emerging. A FOI request from Environment Swansea revealed that 1440 kg of Dakar Pro, a commercial preparation of Roundup® was used in 2015.

⁸ <http://nora.nerc.ac.uk/14557/1/OR11013.pdf>

⁹ <http://www.efsa.europa.eu/en/efsajournal/pub/2550.htm>

Glyphosate preparations authorised by CRD

At least nine different companies market glyphosate with different toxic, commercially secret, formulations. The formulation Roundup® is 1,000 times more toxic than glyphosate alone. The CRD lists on its approved pesticides database 187 different glyphosate products that are licenced to be sold as suitable for the amateur gardener. Glyphosate preparations for professional use are even more: 211. Monsanto calls Roundup® by different names: Dakar Pro, Clinic Ace, ProVantage and ProActiv, in order to confuse people.

An apt phrase from the mining industry: ‘the canary in the cage’

With this effect on wildlife, human health is likely to be affected; **it is**. The area in the vicinity of Roundup® spraying is a hotspot for aggressive cancers (breast, prostate, lung (often in non-smokers) pancreas, ovary, colon, kidney, bladder, liver, uterus (including sarcoma), oesophagus, myeloma, non-Hodgkin’s lymphoma, carcinoid, malignant melanoma, brain tumour, mostly glioblastoma, and neurological disorders (multiple sclerosis, Parkinson’s, Dementia and MND). It is difficult to remain silent, watching the distress of families struggling through chemotherapy and radiotherapy. The unspoken fear that hangs in the air: who will be next?

Who decided to blame alcohol for causing seven types of cancer?

The players in the blame game and their conflicts of interest

Was it the idea of Cancer Research UK?

The Chairman of Cancer Research UK works with the Agrochemical Industry. Michael Pragnell was founder of Syngenta and former Chairman of CropLife International. This syndicate was formed in 2001 from BASF, Bayer, Dow, DuPont, FMC Corp, Monsanto, Sumitomo and Syngenta. The CRUK website says that there is no convincing evidence that pesticides cause cancer. Syngenta has an interest in deflecting the massive increases in cancer from pesticides. The company is both a member of the Glyphosate Task Force (21 Members) and of the International Life Science Institute (ILSI) Europe (67 Corporations).

Was it the idea of Prof Dame Sally Davies the Chief Medical Officer for England?

Prof Dame Sally Davies made the announcement in January 2016 after the Committee on Carcinogenicity of Chemicals in Foods, Consumer Products and the Environment (COC) produced evidence that **alcohol caused cancer**. It was widely reported in the media and from the UK Science Media Centre.

The UK Science Media Centre is hosted by the Wellcome Trust and is financed by industry. It was responsible for suppressing the Séralini rat study by inviting Monsanto and GMO scientists to give ‘expert’ opinions for journalists against it. COT/COC/ACP These UK committees also had members with conflicts of interest. They had claimed that reviews on pesticide exposure and human health were flawed. At the COC meeting in July 2006 members rejected the ‘hypothesis’ of epigenetics; this is the study of gene changes caused by exposure to chemicals in the environment.

The Faroes Statement: Human Health Effects of Developmental Exposure to Chemicals in Our Environment. Published in 2007 by Grandjean *et al.* Twenty-five experts in environmental health from eleven countries contributed including two from the UK. They put out this statement:

“The periods of embryonic, foetal and infant development are remarkably susceptible to environmental hazards. Toxic exposures to chemical pollutants during these windows of increased susceptibility can cause disease and disability in infants, children and across the entire span of human life”.

When I criticised the CMO for dismissing the Royal College of Obstetricians and Gynaecologist’s Report advising pregnant women to avoid chemical exposure as ‘unhelpful’ she asked Dr John Harrison Public Health England Director of Centre for Radiation, Chemical and Environmental Hazards (CRCE) to write to reassure me that there was no evidence that exposure to chemicals in pregnancy caused brain damage. That was the conclusion of a Report by a scientist from Dow, the manufacturer of chlorpyrifos and from *Exponent Inc*, a firm that helps to advise governments and regulators about pesticides.

Public Health England: Dr John Harrison was also the main author of a Report of the Impact of Fracking which concluded that the risks to public health were low: *“In conclusion, the currently available evidence indicates that the potential risks to public health from exposure to the emissions associated with shale gas extraction will be low if the operations are properly run and regulated. In order to ensure this, regulation needs to be strongly and robustly applied.”* This was despite the fact that the American Chemical Association assembled a list of 190 chemicals used in fracking and considered their properties: *“For around one-third of them, there was very little data about health risks, and eight of them were toxic to mammals. Fracking is a highly controversial technique, and has **not** been handed a clean bill of health by the scientific societies.”* On 19 November 2013 Members of the House of Commons Health Select Committee questioned the priorities of the new PHE Committee that had only taken over from the Health Protection Agency in April 2013.¹⁰ The Health Protection Agency had displeased the Work and Pensions Department (WPD) by publishing major study of four- to 18-year-olds stating that around one in every 55,000 vaccinations caused by the GSK Pandemrix swine flu vaccine was associated with narcolepsy.¹¹ Up until then, the WPD would only pay out for 60% disability.

Prof Alan Boobis: Vice President of the International Life Science Institute (ILSI) Europe: conflicts of interest in the UN JMPR

Arthur Neslen reported: *“A UN panel that on Tuesday ruled that glyphosate was probably not carcinogenic to humans has now become embroiled in a bitter row about potential conflicts of interests. It has emerged that an institute co-run by the chairman of the UN’s joint meeting on pesticide residues (JMPR) received a six-figure donation from Monsanto, which uses the substance as a core ingredient in its bestselling Roundup weedkiller. Professor Alan Boobis, who chaired the UN’s joint FAO/WHO meeting on glyphosate, also works as the vice-president of the International Life Science Institute (ILSI) Europe. The co-chair of the sessions was Professor Angelo Moretto, a board member of ILSI’s Health and Environmental Services Institute, and of its Risk21 steering group too, which Boobis also co-*

¹⁰ <https://www.gov.uk/government/publications/shale-gas-extraction-review-of-the-potential-public-health-impacts-of-exposures-to-chemical-and-radioactive-pollutants>

¹¹ <http://www.bmj.com/content/346/bmj.f794#aff-3>

chairs.” When Glyphosate was reassessed in 2002, Prof Alan Boobis was also Chairman of the UN’s JMPR meeting on pesticide residues.¹² Prof Boobis is current Chairman of Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment (CoT), which claimed to be an independent scientific committee.

Industry off the hook: alcohol linked to seven forms of cancer: this ‘alleged fact’ is continually reinforced by the UK media until the public believes it

The Chief Medical Officer for England announced in January 2016 that alcohol caused cancer; there was ‘no safe dose’. She said that she, the Committee on Carcinogenicity, Public Health England and the two CMOs for Scotland and Wales all agreed with her. I had written to her in November 2015 to say that there was no safe dose of **GLYPHOSATE** (as a cause of cancer). An article was published in the *British Medical Journal* on 9 April 2016 reporting a survey commissioned by **Cancer Research UK** ‘People lack awareness of link between alcohol and cancer.’ The Report produced by researchers at the University of Sheffield ‘comes ahead of the consultation closing on how well new drinking guidelines proposed by the UK’s Chief Medical Officers in January 2016, are communicated.’

*“Almost 90 per cent of people in England don’t associate drinking alcohol with an increased risk of cancer” Alison Cox, **Cancer Research UK**’s Director of Cancer Prevention. She said: **“The link between alcohol and cancer is now well established, and it’s not just heavy drinkers who are at risk. Drinking alcohol is linked to an increased risk of seven different cancers - liver, breast, bowel, mouth, throat, oesophageal (food pipe), laryngeal (voice box) - but when people were asked “which, if any, health conditions do you think can result from drinking too much alcohol?” just 13 per cent of adults mentioned cancer.”***

Dr Penny Buykx, a senior research fellow at The University of Sheffield and lead-author of the report, said: *“We’ve shown that public awareness of the increased cancer risk from drinking alcohol remains worryingly low. People link drinking and liver cancer, but most still don’t realise that cancers including breast cancer, mouth and throat cancers and bowel cancer are also linked with alcohol, and that risks for some cancers go up even by drinking a small amount. On May 19th 2016 when there was an EU decision to delay the vote on glyphosate, Prof David Coggon former Chairman of CoT said to the SMC: “to give an analogy, alcohol is a definite cause of cancer in humans.”*

Guardian Health Editor Denis Campbell reported a study by Connor from New Zealand that appeared to confirm that alcohol was a direct cause of seven forms of cancer.¹³ He implied it was NEW research. He quoted directly from the UK Science Media Centre. Prof Alan Boobis, the first expert said: **“The science is now well established. The main difficulty is communicating effectively with the public.”** He gave a link to Cancer Research UK. Campbell also reported Dr Penny Buykx, who had been commissioned by CRUK to undertake a study...but he did not quote Prof Dorothy Bennett who said this wasn’t a NEW study from New Zealand but a review by Connor. (The UK SMC had presented it as a new study.) Denis Campbell appeared to be reinforcing the pesticides industry’s assertion

¹² http://whqlibdoc.who.int/publications/2006/9241665203_eng.pdf?ua=1

¹³ <https://www.theguardian.com/society/2016/jul/22/alcohol-direct-cause-seven-forms-of-cancer-study>

that cancers are caused by alcohol and there is no safe dose: the CMO's phrase, lifestyle choices. A blog on CRUK reinforced it again by a link to The Guardian article and one to The Independent that repeated the alcohol and cancer story. The SMC in 2011 said it had an unusual agreement with journalists. They had to sign a contract that they wouldn't discuss it with anyone beforehand. Was that why Denis Campbell couldn't talk to his Guardian colleague Arthur Neslen and discover that Prof Alan Boobis had financial conflicts of interest?

Cancers in pets have increased similarly over that time: is that due to alcohol?

The American Veterinary Medical Foundation notes that *"Cancer is the leading cause of death in older pets accounting for almost half the deaths of pets over 10 years of age"* According to Samsel¹⁴ mammary tumours are common in dogs and cats and the incidence is increasing. He analysed nine brands of dog and cat food and found significant levels of glyphosate and AMPA in all of them. Séralini's group wrote a paper 'Laboratory Rodent Diets Contain Toxic Levels of Environmental Contaminants: Implications for Regulatory Tests'. *We describe the contamination with environmental pollutants of 13 laboratory rodent diets from 5 continents.*"¹⁵

In 1985 the US EPA classified glyphosate as a Group C carcinogen but changed to Group E in 1991¹⁶

An archival document from the US EPA revealed that some US EPA staff colluded with Monsanto to downgrade the classification of the carcinogenicity of glyphosate. The original Panel comprised of members of the Toxicology Branch of the Hazard Evaluation Division who examined the carcinogenic potential of glyphosate. In a consensus review on March 4 1985 the Committee classified glyphosate as a Group C carcinogen. It was based on the incidence in rats/mice of renal tumours, thyroid C-cell adenomas and carcinomas, pancreatic islet cell adenomas, hepatocellular adenomas and carcinomas in males. However, in 1991 The Health Effects Division Carcinogenicity Peer Review Committee met on June 26 1991 to discuss and evaluate the weight of evidence on glyphosate with particular emphasis to its carcinogenic potential. In a review of the data the Committee concluded that glyphosate should be classified as Group E (evidence of non-carcinogenicity for humans). In order to cover themselves they declared: *"It should be emphasized, however, that the designation of an agent in Group E is based on the available evidence at the time of evaluation and should not be interpreted as a definitive conclusion that the agent will not be a carcinogen under any circumstances"*

There were signatures of the 11 members present, six members signed *in absentia* but three members refused to sign because they *"did not concur."* Presumably they knew that the change of classification of glyphosate from Group C to Group E was fraudulent.

¹⁴

https://www.academia.edu/17751562/Glyphosate_pathways_to_modern_diseases_IV_cancer_and_related_pathologies

¹⁵ <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0128429>

¹⁶ http://www.epa.gov/opp00001/chem_search/cleared_reviews/csr_PC-103601_30-Oct-91_265.pdf

Toxicity to wildlife and the ecosystem: German Rapporteur Member State (BfR) claimed that glyphosate's ecotoxicity is low

I challenged EFSA's Dr José Tarazona and Dr Bernhard Url about this between November 2015 and February 2016. I sent Dr Url a copy of our photo-journal: The Year of the Bumblebee. Dr Tarazona said I wasn't to worry because there were still 'data gaps'.

I felt even more optimistic about the outcome when four MEPs asked for Freedom of Information about the confidential studies that EFSA said showed that glyphosate wasn't carcinogenic.¹⁷

William Engdahl, veteran US journalist wrote on 15/05/2016: The Amazing Glyphosate Revolt Grows: *"To date the EU Commission has received a staggering 1.5 million citizen petitions demanding they not re-approve glyphosate. The opposition to EU Commission approval of glyphosate has taken on a self-expanding character and that has the agribusiness weed-killer cartel alarmed. The process is exposing to the general public, for the first time in such a clear manner, the degree of corruption in not only Brussels but also in the so-called scientific bodies that advise it on what is safe and what not."*

Glyphosate relicensed for 18 months without significant restrictions

If by 30th June 2016, the Member States were unable to decide, glyphosate would have been taken off the shelves. Yet, despite these 'data gaps', the unelected European Commission re-licensed glyphosate on 28th June for 18 months while the European Chemical Association (ECHA) produced its verdict.

EU legislation is set up to protect the pesticides industry

Monsanto Europe replied to Health Commissioner Andriukaitis on 04/04/2016 to say that the 24 GTF members were prepared to grant very limited access to the data.¹⁸

From this we learn that the current EU legislation is set up to *"protect intellectual property and confidential information from public disclosure."* *"All confidential data ...shall be deleted or redacted (Regulation 1107/2009, Article 63)."* Much of the industry data submitted to the German RMS was redacted.

Biocides Regulation is controlled by the pesticides industry and based in Britain: 'to enhance the competitiveness of the EU chemicals industry'

A global industry has emerged to advise on Biocides Regulation (= a substance that is KILLING LIFE). Biocides Symposia are held regularly around the world to *"get up-to-speed on all that's new in biocidal products regulation"* to *"stay one step ahead."* Courses are from £300-400 per day to \$1585 for a Symposium. A multitude of firms have clients from 'industry, crop protection and government'. Chemical Watch **BiocidesHub** (Shrewsbury UK) offers 13 Events on Biocides Regulation in 2016, ranging from beginners courses to advanced courses.

REACH (Registration, Evaluation, Authorisation and Restriction of Chemical

¹⁷ http://www.asktheeu.org/request/is_glyphosate_safe_we_have_the_r

¹⁸

<https://dl.dropboxusercontent.com/u/6366131/letter%20to%20Commissioner%20Andriukaitis.pdf>

substances) is a regulation of the European Union, adopted to improve the protection of human health and the environment from the risks that can be posed by chemicals, while enhancing the competitiveness of the EU chemicals industry. It also promotes alternative methods for the hazard assessment of substances in order to reduce the number of tests on animals.

It came into force in 1st June 2007. *Exponent Inc.* is a company that helps chemical firms with REACH compliance.¹⁹ It describes itself as “*a research and scientific consultant firm with clients from industry (including crop protection) and government.*” *Exponent Inc.* was employed by Bayer to criticise EFSA’s work on neonicotinoids and bees in 2013. It also contributed to a review by a Dow employee that concluded that “*exposure to specific pesticides during critical periods of brain development and neurobehavioral outcomes is not compelling.*”²⁰

Unanswered letters from the UK Government, Civil Servants, Media, Doctors and Academic Bodies

My Open Letters to the CMO England, The Wellcome Trust and Public Health England; The Director General of the BBC, former Defra Minister Lord de Mauley; The British Medical Association, the Editor-in-Chief of *Nature*, the *British Medical Journal*, *The Times* and *The Guardian* (among many others) were unanswered. Surprisingly the President of the NFU did reply to my 13-page Open Letter to the NFU, but possibly he hadn’t read it very carefully or he had got the pesticides industry to reply on his behalf.²¹ Meurig Raymond wrote to defend the right of farmers to use chemicals to protect their crops even though I had informed him that they were damaging the brains of children in Britain.

“*Dear Ms Mason*

The NFU firmly believes that technologies such as advanced plant breeding, biotechnology and chemical crop protection are a positive and essential part of British farming and food production. There are significant challenges inherent in providing safe, affordable and high quality food in a sustainable way in the context of growing populations, pressure on resources, volatility and a changing climate. We must therefore have all the tools in the box to source solutions to these challenges. The NFU is committed to basing its policies on the most robust scientific evidence and expertise from scientists and regulatory authorities around the world.

Meurig Raymond President”

Dame Sally Davies used to reply to me: did my questions get too difficult?

In March 2014 I wrote to tell her that glyphosate had four patents, one of which was as an antibiotic. I asked her whether she would denounce it to the press and parliament as an apocalyptic threat to humans by being the main cause of antibiotic resistance? She replied that she would leave that to the pesticides regulators. On 12/05/2014 I wrote to Gina McCarthy US Environmental Protection Agency Administrator and asked her among other things, if she knew

¹⁹ <http://www.exponent.com/REACH/>

²⁰ <http://www.ncbi.nlm.nih.gov/pubmed/23777200>

²¹ https://www.academia.edu/17144792/Open_Letter_to_the_National_Farmers_Union

that four different patents had been filed and granted for glyphosate. I had a reply from the Office of Chemical Safety and Pollution Prevention on 19 June 2014. *“Monsanto has not informed us of these claims you make and, to date, such claims have not been supported by rigorous scientific studies...The US EPA ensures that a pesticide, when used according to label directions, does not cause unreasonable adverse effects to human health or the environment.”*

Monsanto’s (and the Regulator’s) major errors of human physiology

Monsanto bought glyphosate as a chelator of minerals for cleaning out boilers. They registered it as a herbicide because killed plants, fungi and bacteria by extracting essential minerals such as zinc, manganese and cobalt. They claimed it didn’t affect humans. But humans can only absorb nutrients by means of the bacteria in their gut. It was also patented as an antibiotic and an antiprotozoal.

Brief identical replies from Defra both before and after EFSA reported

Before EFSA had reported they consistently replied that I had to wait for EFSA to report. After EFSA had reported they said that they agreed with EFSA, glyphosate was not carcinogenic. Lord Gardiner of Kimble, Defra Spokesperson in the House of Lords, promoted by Prime Minister May to Under Secretary of State for Defra, said exactly the same; glyphosate was not carcinogenic.

Even when I wrote to Jeremy Hunt Minister for Health to tell him why the Health Service was falling apart, I had the same refrain from the Department of Health.

Pesticide residues in food in the UK

ADAS recommended pre-harvest crop spraying with Roundup® in 1980²² and spraying on grassland in 1985. Researches showed two Monsanto scientists wrote the first papers.

Defra Expert Committee on Pesticide Residues in Food.²³ This is why we all have glyphosate residues in our bodies: it is in all our staple foods. The results from monitoring of Pesticide Residues in food have been published quarterly since 2000. Bread and breakfast cereals are staple foods but there are no maximum residue levels (MRLs) for bread or cereals. Residues in bread are tested twice a year.

2002 3rd Quarter: Comments: “Residues of chlormequat,²⁴ glyphosate and pirimiphos-methyl²⁵ were found (in bread). These pesticides are commonly used on cereal crops, and residues have been found in other cereal products, therefore these findings are not unexpected. None of the residues found were of concern for consumer health.

2006 3rd Quarter: Comments: “Eating more starchy foods, like bread, is an important part of the Food Standards Agency’s (FSA) advice on healthy eating. The

²² <http://www.hgca.com/media/185527/is02-pre-harvest-glyphosate-application-to-wheat-and-barley.pdf>

²³ <http://www.pesticides.gov.uk/guidance/industries/pesticides/advisory-groups/PRiF/about-PRiF>

²⁴ Chlormequat, a plant growth regulator was present consistently throughout.

²⁵ pirimiphos-methyl, is an organophosphate insecticide for use in storage. The approval was revoked on 24/03/2011, but it was only finally banned 31/03/2013, presumably to allow stocks to be used up.

incidence of pesticide residues in bread is relatively high, but our assessment of the risk indicates that the levels we have found in this survey would not be expected to have an effect on health.”

2007 3rd Quarter: Comments: *“Eating more starchy foods, like bread, is an important part of the FSA’s advice on healthy eating. We often find pesticide residues in bread but our assessment of the risk indicates that the levels we have found in this survey would not be expected to have an effect on health. We have asked the Secretariat to write to the Home Grown Cereals Authority about the incidence of residues”*. I couldn’t find a reply.

2011 3rd/4th Quarters for Lentils: Comments: *Sixteen samples of lentils contained glyphosate above the MRL. A new higher level of glyphosate is expected to come into force in summer 2012. None of the residues detected in this survey would be above the new proposed MRL.”*

The use of glyphosate for desiccation on both barley and wheat crops was accepted by the brewing and distilling industries in 2007.²⁶ Many foods imported from the US have GM ingredients and will contain glyphosate (or other herbicide residues). These include products that are made from corn or soya, such as energy bars, sugar drinks; and fruit or vegetables. The US still does not require labelling of GM. Animals in the UK are fed with imported GM soya and maize.

EFSA’s Reasoned Opinion Panel increases MRLs at the request of industry (Monsanto in this case, to 100 times the previously authorised MRL)

Monsanto Europe asked EFSA to set the import tolerance for glyphosate in lentils *“in order to accommodate the authorised desiccation use of glyphosate in lentils in the US and Canada”* from 0.1 mg/kg to 10 mg/kg²⁷ (i.e. 100 times: January 2012). EFSA had granted similarly elevated MRLs for glyphosate on wheat and GM soya.

Healthy Harvest-safeguarding the Crop Protection toolbox: June 2014

The National Farmers’ Union (NFU), the Crop Protection Association (CPA) and Agricultural Industries Confederation (AIC) launched *Healthy Harvest – safeguarding the crop protection toolbox* in June 2014. The NFU and pesticide companies continually defend the use of pesticides for economic reasons and complain at any attempt to restrict the 320 at their disposal. One farmer defended aerial spraying of bracken with a herbicide.²⁸ CPA, AIC and the NFU commissioned Andersons to write a Report: The effect of the loss of plant protection products (i.e. pesticides) on UK Agriculture and Horticulture that predicted dire economic effects on UK farming if pesticides were restricted.²⁹

Soil Association’s campaign NOT IN OUR BREAD:³⁰ the UK’s position is anomalous

²⁶ Notes on the use of Roundup® products on malting, milling and seed crops: Monsanto UK Ltd 2007.

<http://www.grainfarmers.co.uk/seeddownloads/Roundup%20on%20seed%20%20milling%20and%20malting.pdf>

²⁷ <http://www.efsa.europa.eu/en/efsajournal/pub/2550.htm>

²⁸ https://www.nfuonline.com/healthyharvest_final_digital/ The impact of losing plant protection products on UK Food Production

²⁹ http://www.cropprotection.org.uk/media/89364/andersons_final_report.pdf

³⁰ <http://www.soilassociation.org/notinourbread>

Meeting on 15 July 2015 in London between the Soil Association and a Scientific Panel³¹

The scientific panel included Professor Christopher Portier one of the co-authors of the World Health Organisation's International Agency for Research on Cancer's (IARC) recent report that determined Glyphosate's status as a probable carcinogen. Portier reiterated the IARC's conclusions, and said: "*Glyphosate is definitely genotoxic. There is no doubt in my mind.*"

Dr Robin Mesnage of the Department of Medical and Molecular Genetics at Kings College in London, revealed new data analysis showing Round Up®, the most common brand of Glyphosate-based herbicides, is 1,000 times more toxic than Glyphosate alone due to the inclusion of other toxic chemicals in its mix. Claire Robinson, an editor at GMWatch.org gave the international perspective looking at moves by other countries to ban Glyphosate; "*Outside the United Kingdom, the reaction to the WHO IARC report has been dramatic. Some retailers in Switzerland and Germany have removed Glyphosate products and France has committed to do so by 2018 and German states are calling for an EU-wide ban. The Danish Working Environment Authority has declared it as a carcinogen and El Salvador and Sri Lanka have banned it and the Colombia government has banned aerial spraying on coca crops.*"

Peter Melchett, Soil Association policy director said; "*If Glyphosate ends up in bread it's impossible for people to avoid it, unless they are eating organic. On the other hand, farmers could easily choose not to use Glyphosate as a spray on wheat crops – just before they are harvested. This is why the Soil Association is calling for the immediate ending of the use of Glyphosate sprays on wheat destined for use in bread.*"

Pesticide residues in non-organic food are increasing year on year

A Report by Pesticides Action Network-UK has shown that 46% of non-organic food in 2013 contained residues of one or more pesticides. This had increased from 25% in 2003.³² A further Report by PAN-UK: Pesticides in your daily bread showed that nearly two-thirds of bread contained one or more pesticides and the three most frequently found were glyphosate, chlormequat and malathion.³³

UK farmers use more carcinogenic weed killer: The Times August 15 2015³⁴

"Farmers have sharply increased their use of a weed killer that has been classified as 'probably carcinogenic in humans.'" Ben Webster, *The Times* Environment Correspondent said. "More than 1,700 tonnes of glyphosate were sprayed on crops last year, up a third on 2012, according to the Department for Environment, Food and Rural Affairs (Defra). The total area sprayed with the weed killer grew by almost 500,000 hectares to 2.1 million hectares, an area the size of Wales." Guy Gagen, Chief Arable Adviser for the National Farmers' Union, said that glyphosate

³¹ <http://www.soilassociation.org/news/newsstory/articleid/8110/soil-association-calls-for-ban-on-glyphosate-the-world-s-most-widely-sold-weedkiller>

³² http://www.pan-uk.org/files/pesticides_on_a_plate_2013_final.pdf

³³ [http://www.pan-uk.org/files/Pesticides%20in%20Your%20Daily%20Bread%20guide%20-%20FINAL%20\(1\).pdf](http://www.pan-uk.org/files/Pesticides%20in%20Your%20Daily%20Bread%20guide%20-%20FINAL%20(1).pdf)

³⁴ <http://www.thetimes.co.uk/tto/environment/article4528297.ece>

usage had probably increased to control black-grass,³⁵ a weed that is resistant to weaker herbicides. He said: “No farmer would be wanting to put a chemical on a crop when he doesn’t need to.” He added that spraying wheat could result in traces of glyphosate ending up in bread sold in supermarkets but the amount was well below the maximum residue level set by the EU. A Defra spokesman said: “There are extensive regulations in place so that people and the environment are protected from pesticides. The approval of glyphosate for use across Europe is being reviewed by the EU Commission.”

UK Food and Environment Research Agency (FERA) survey of pesticides 1988 to 2014

This review of pesticides active substances and number of times treated from 1988 to 2014 confirms that Pesticide Residues on British food are increasing annually. A survey of pesticide (active substances) usage on Oil Seed Rape (OSR) 1988-2014 showed that the number of active substances applied had increased from 5 in 1988 to 15 in 2014 (Fig 1) and the number of treatments had increased from 5 in 1988 to 12 in 2014. (Fig 2) In 2014, herbicides were used on 98.4% OSR and seed treatments on 95.8%.

In 2014 glyphosate was used on Wheat (601,330 kg) Winter barley, Spring barley, Oats, Rye, Triticale, Oilseed rape (577,969 kg), Linseed, All potatoes, Peas, Beans, Sugar beet, with a total of 1,765,465 kg glyphosate on all crops. The total weight of pesticides (herbicides and desiccants, fungicides, growth regulators, molluscicides and repellants, insecticides and seed treatments) applied to farmland in 2014 was in excess of 16,000 tonnes.

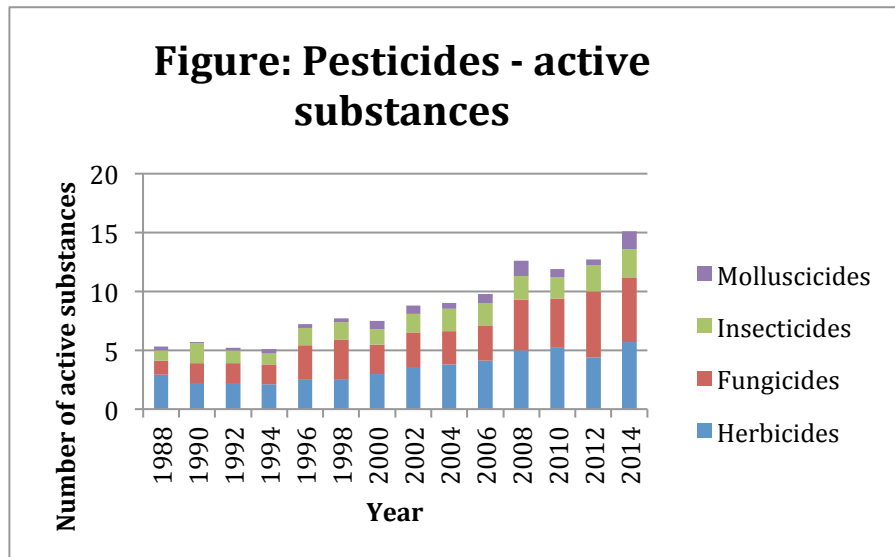


Fig. 1 PESTICIDES: Number of active substances used on Oil Seed Rape in the UK between 1988 and 2014: By kind permission of John Hoar, Hampshire Beekeeper’s Spray Liaison Officer. Figures supplied by FERA

³⁵ HERBICIDE RESISTANT BLACKGRASS, FIRST SEEN IN 1982 IS NOW FOUND ON 16,000 FARMS IN 34 COUNTIES. This is a glyphosate-resistant super weed, the same as in GM in the US and Japanese Knotweed in the UK. Does the NFU understand super weeds and do they really want GMO technology?

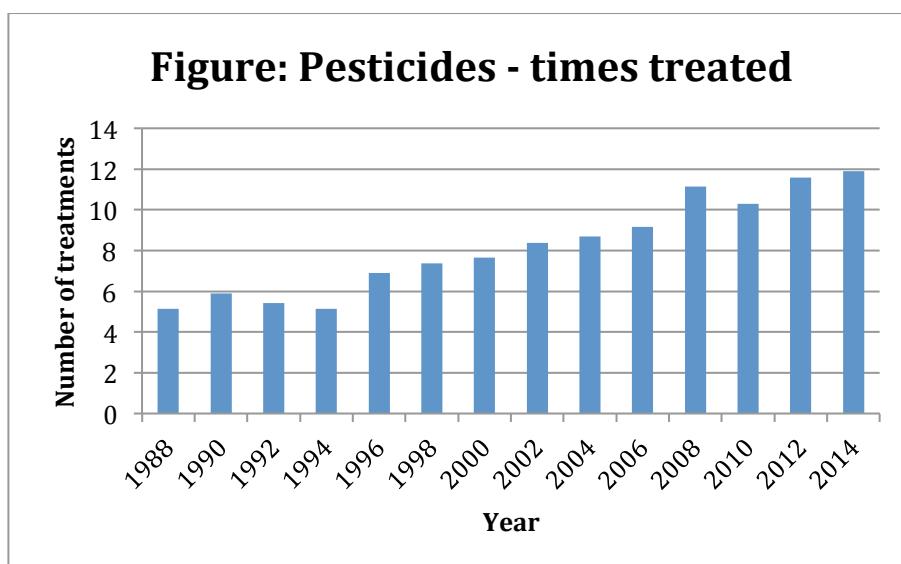


Fig. 2 PESTICIDES TIMES TREATED: used on Oil Seed Rape in the UK between 1988 and 2014: By kind permission of John Hoar, Hampshire Beekeepers Spray Liaison Officer. Figures supplied by FERA

One of Monsanto’s own long term studies in rats in 1990³⁶ showed an increased risk of cataracts following exposure to Roundup®

Annual rates of admission for cataract surgery in England rose 10-fold from 1968 to 2003: from 62 episodes per 100,000 population in 1968 to 637 in 2004. The rate of cataract surgery in England “increased very substantially” between 1989 and 2004 from 173 (1989) to 637 (2004) episodes per 100,000 population.³⁷

A 2016 study by the WHO also confirmed that the incidence of cataracts had greatly increased:³⁸ ‘A global assessment of the burden of disease from environmental risks.’ says that cataracts are the leading cause of blindness worldwide. Globally, cataracts are responsible for 51% of blindness – an estimated 20 million individuals suffer from this degenerative eye disease. The rat study on cataracts was one of many that Anthony Samsel obtained under FOI from the US EPA.³⁹ He said: “Forty years of glyphosate exposure have provided a living laboratory where humans are the guinea pigs.”

The British Government joined forces with Monsanto, EFSA and the EU Commission is to fight civil society in the EU Court ⁴⁰ to defend the right to import Monsanto’s transgenic soybean Intacta® which produces an insecticide and is resistant to glyphosate herbicides such as Roundup®.

³⁶ Stout, L.D. & Ruecker, F.A. Chronic study of glyphosate administered in feed to albino rats. Unpublished Study, Project No. MSL-10495. Monsanto Agricultural Company (2,175 pp.) EPA MRID 416438-01 (26 September 1990)

³⁷ <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1955650/>

³⁸ http://apps.who.int/iris/bitstream/10665/204585/1/9789241565196_eng.pdf

³⁹ <https://people.csail.mit.edu/seneff/SamselSeneffGlyphosateIV.pdf>

⁴⁰ <http://www.testbiotech.de/en/node/898>

The problem of obesity in the UK: is it a lifestyle choice?

CMO England blames obesity on lifestyle choices: but these studies suggest that it is a problem related to glyphosate residues in food

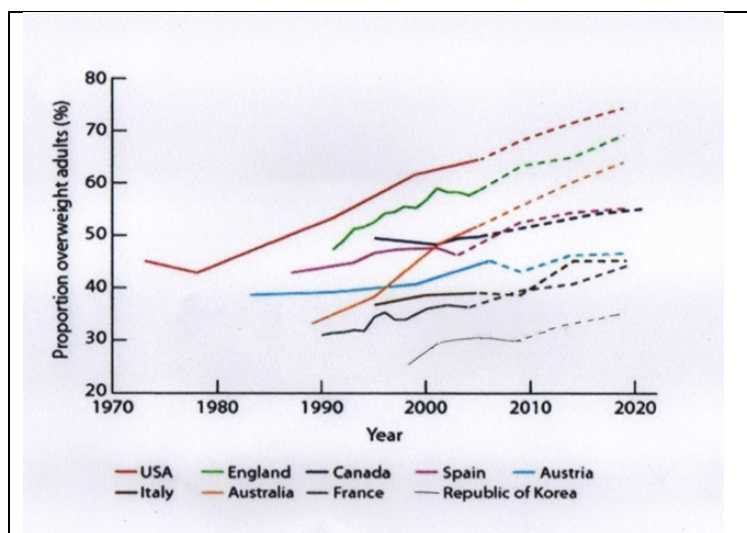
A study showed that by 2025, the UK will have the highest obesity rates among both men and women in Europe, at 38%: in contrast in France women have had virtually no increase in BMI over 40 years

A study on obesity published in *The Lancet* in March 2016 says: "About a fifth of all adults around the world and a third of those in the UK will be obese by 2025, with potentially disastrous consequences for their health".⁴¹ The Lancet Study says that there is zero chance that the world can meet the target set by the UN for halting the climbing obesity rate by 2025.

"Over the past 40 years, we have changed from a world in which underweight prevalence was more than double that of obesity, to one in which more people are obese than underweight," said senior author Prof Majid Ezzati from the School of Public Health at Imperial College London. "The English-speaking world is particularly badly affected. **The UK will have the highest obesity among both men and women in Europe, at 38%.**

In contrast: "Against the trend of steadily rising weight, women in some countries had virtually no increase in BMI over the 40 years – in Singapore, Japan, and a few European countries including Czech Republic, Belgium, **France**, and Switzerland."

Obesity levels in England are second only to the US and are running a parallel course to the US



Historical and projected overweight rates in OECD countries⁴²

Some of the UK population has been exposed to glyphosate residues in foods since 1980, even without growing GM Glyphosate-tolerant crops.⁴³ The US has

⁴¹ <http://www.theguardian.com/society/2016/mar/31/one-fifth-of-worlds-adults-will-be-obese-by-2025-study-predicts>

⁴² Healthy Choices OECD Health Ministerial Meeting, Paris, 7-8 October 2010
<http://www.oecd.org/health/ministerial/46098333.pdf>

had GM crops since 1996. The third area with the most overweight adults is Australia, where obesity levels started to rise steeply in 1990 and by 2000 have overtaken Spain and Canada, both of which have GMs. There are 553 glyphosate products registered in Australia. Glyphosate use on GM crops is accelerating. GM canola was registered in 2003, but bans in NSW and Victoria were lifted in 2008.⁴⁴ Canola has been registered to be desiccated since October 2014⁴⁵ and sunflowers since 2012.⁴⁶ However, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) is promoted as Australia's 'pre-eminent public scientific research body'. *"Although ostensibly publicly funded, CSIRO has, in reality, been encouraged to get 30% of its funding from business, with the CSIRO top management encouraging its staff to go to 40%."* According to John Stocker, CSIRO's former Chief Executive: *"Working with the trans-nationals makes a lot of sense, in the context of market access. There are very few Australian companies that have developed market access in the United States, in Europe and in Japan, the world's major marketplaces. Yes, we do find that it is often the best strategy to get into bed with these companies."*⁴⁷

Children: Almost one in four Australian children (23%) is overweight or obese and one in three expected to be by 2025 (AIHW 2012). Children who are obese are more likely than other children to develop asthma, type 2 diabetes, cardiovascular conditions and some cancers. Cancer Research UK website shows similar trends for certain cancers.

Substantial increase in neurological deaths 1979-2010

Ten major developed Western countries and 10 smaller Western countries were studied.⁴⁸ Total neurological deaths rose substantially between 1980 and 2010 in both sexes in 16 out of 20 western countries; in particular early onset Parkinson's, Alzheimer's and other Dementias, and Motor Neurone Disease. Female neurological deaths in 9 out of 10 countries were greater than males. The authors thought the causes were likely to be epigenetic rather than hereditary. *"Moreover, looking back 30 or more years the concept of early dementia or the need for the creation of a Young Parkinson's Disease Society in Britain would have seemed a tautology."*

Why did Monsanto choose Britain to be the Rapporteur Member State for aspartame?

The scandal of Britain and EFSA's relicensing of aspartame: Monsanto's neurotoxic sweetener

⁴³ <http://www.hgca.com/media/185527/is02-pre-harvest-glyphosate-application-to-wheat-and-barley.pdf>

⁴⁴ <http://www.sbs.com.au/news/article/2012/11/15/factbox-gm-foods-australia>

⁴⁵ <http://www.farmweekly.com.au/news/agriculture/cropping/general-news/new-canola-weed-control-option/2714416.aspx>

⁴⁶

http://www.australianoilseeds.com/about_aof/news/glyphosate_as_a_desiccant_in_sunflowers

⁴⁷ <http://www.gmwatch.org/latest-listing/1-news-items/13325-csiro-in-bed-with-multinationals>

⁴⁸ <http://dx.doi.org/10.1016/j.phe.2012.12.018> Pritchard, C. *et al.* Changing patterns in mortality from neurological deaths in the 10 major developed countries: 1979-2010 Public Health (2013)

For the first 16 years the Food & Drug Administration (FDA) banned aspartame because it was highly toxic to the nervous system. FDA Scientist Adrian Gross told Congress that without a shadow of a doubt, aspartame can cause brain tumors and brain cancer and that it violated the Delaney Amendment, which forbids putting anything in food that is known to cause cancer.⁴⁹ The UK first authorised aspartame in 1982. That was the very year that Donald Rumsfeld who was CEO of Searle (at that time the manufacturer of aspartame before Monsanto bought Searle) managed to get it licensed with the help of Ronald Reagan.

Aspartame reviewed by the UK FSA, the Committee on Toxicity and EFSA
UK Committee on Toxicity (CoT) of chemicals in food position paper on a double blind randomized crossover study of aspartame.⁵⁰ *“At its meeting on 29 October 2013, the Committee on Toxicity discussed a paper, describing results from a study led by scientists at Hull York Medical School... The government watchdog has not released the full details of the research because they remain confidential until they have been published in a peer-reviewed journal.*

The Committee judged the delay acceptable since the results presented did not indicate any need for action to protect the health of the public.” EFSA also has re-evaluated the safety of aspartame.⁵¹ As a result, it concluded in December 2013 that 'aspartame and its breakdown products are safe for human consumption at current levels of exposure'. Prof David Coggon was Chairman of CoT and there were three members with undeclared conflicts of interest: one from Syngenta and two from AstraZeneca, Syngenta's parent company. Prof Alan Boobis Vice-Chairman of ILSI Europe has now replaced Prof Coggon as Chairman of CoT.

Profound disagreement from many independent organisations

Professor Erik Millstone⁵² sent a 67-page detailed response to the Head of EFSA 'Food Ingredients and Packaging' Unit and the Senior Scientific Officer.⁵³ The cancer studies in rats by the Ramazzini Foundation⁵⁴ were ignored, just as Dr Betty Martini and Dr John Olney⁵⁵ have been ignored in the US.

How did we get into this mess?

A new generation of population biologists began the science of mathematical ecology and statistics

Sir John Beddington former Chief Scientific Adviser to the UK Government was one of the first of a group of scientists that called themselves 'population biologists'. (Sir John thanked me politely for sending him a copy of our photojournal, but presumably failed to get as far as the Postscript: A history of the UK Government's responses to the Biodiversity Crisis). In fact, at a meeting in May 2010 in Dundee, some of Sir John's former students celebrated the fact that

⁴⁹ <http://m.huffpost.com/us/entry/805581>

⁵⁰ <http://cot.food.gov.uk/pdfs/cotposponaspar.pdf>

⁵¹ <http://www.food.gov.uk/news-updates/news/2013/dec/efsa-aspartame#.UuAtV3xFDcs>

⁵² Professor of Science Policy at the University of Sussex.

⁵³ http://sro.sussex.ac.uk/43821/1/EM_Letter_to_EFSA_on_Aspartame_22Feb2013.pdf

⁵⁴ <http://www.ncbi.nlm.nih.gov/pubmed/17805418> e

⁵⁵ <http://www.scribd.com/doc/6669992/Dr-John-Olney-Statement-Aspartame-1987> Dr. John Olney's letter to the Senate in 1987.

he had turned '*soft science into hard science*'. By this they meant he had led them away from studying organisms in the field to study them theoretically, in a far more comfortable place....in a University in front of a computer. They also said that he began '*the tradition of strong mathematical ecology in the UK*.' He also encouraged mathematics graduates to enter biology. He felt a biology degree wasn't necessary; just an ability to do statistics and mathematical modelling.

Why did the EFSA GMO Panel say that glyphosate and GM would not harm Lepidoptera species?

In 2012 the Chairman of the GMO Panel Prof Joe Perry (together with 14 other scientists including one from EFSA) was lead author of a paper in the *Journal of Applied Ecology* "Estimating the effects of Cry1F Bt-maize pollen on a non-target Lepidoptera, using a mathematical model of exposure."⁵⁶ *Conclusion: Mitigation measures of risks of Bt-maize to sensitive larvae of non-target lepidopteran species can be effective, but depend on host-plant densities, which are in turn affected by weed-management regimes (sic).*

Mathematical modelling failed to predict the near extinction of the migrant Monarch butterfly by GMO Roundup resistant crops in the US.

In February 2015 the US Center for Food Safety produced an 88-page Report: *Monarchs in peril: Herbicide-Resistant Crops and the decline of Monarch Butterflies in North America.*⁵⁷ "*Unlike many other weed killers, once absorbed it (glyphosate) is translocated (moved internally) to root tissue, where it kills milkweed at the root and so prevents regeneration. The increasingly common practice of growing Roundup Ready crops continuously on the same fields means that milkweed is exposed to glyphosate every year, with no opportunity to recover. In 1999, common milkweed was found in half of corn and soybean fields, but only 8% of them a decade later.*"

This new approach to studying biology has been heavily criticized in two recent papers: Natural history is critically important for learning about organisms

Tewksbury *et al.* in *Natural History's Place in Science and Society*⁵⁸ the authors argue that natural history is of critical importance for learning about organisms, their links to communities and ecosystems and their biotic and abiotic interactions. Examples are provided of the vital importance of knowledge of natural history to many disciplines: human health, food security, conservation, management and recreation and the costs of mistakes of not having that knowledge.

Natural decline: Few biology degrees still feature natural history. Is the naturalist a species in crisis?

An editorial in *Nature* in 2014⁵⁹ discussed the requirements to be awarded an undergraduate biology degree. Today a biology degree requires no courses in natural history, whereas in the US in 1950 it required two or more courses. Subjects such as molecular biology, genetics, experimental biology, mathematical

⁵⁶ <http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2664.2011.02083.x/pdf>

⁵⁷ http://www.centerforfoodsafety.org/files/cfs-monarch-report-2-4-15_design_05341.pdf

⁵⁸ https://www.academia.edu/6565695/Natural_historys_place_in_science_and_society

⁵⁹ <http://www.nature.com/news/natural-decline-1.14966>

modelling, population biology and statistics have taken over. However, many of the fields rely on data, specimens and collections from natural history. The editors recommend that a biology diploma should not be awarded without a course in identifying organisms, learning the basic techniques for observing and recording data. (Thus, today there are senior entomologists who write papers about the effects of pesticides on pollinators, yet do not know the critical differences between the life cycles of bees and bumblebees).

Sustaining Life: How Human Health Depends on Biodiversity⁶⁰

Dr Eric Chivian founded the Center for Health and the Global Environment at Harvard Medical School in 1996: *"To help people understand that our health, and that of our children, depends on the health of the environment and that we must do everything we can to protect it"*

Eric Chivian and Aaron Bernstein co-edited the above book, which includes contributions from more than 100 leading biodiversity and health scientists. It was published in June 2008 by Oxford University Press and was co-sponsored by the United Nations Development Programme, the United Nations Environment Programme, the Secretariat of the Convention on Biological Diversity and the World Conservation Union.

Humans need invertebrates; without them they cannot survive

Prof E.O. Wilson the eminent field entomologist from Harvard, who in his book *Naturalist*,⁶¹ has documented massive global declines of ant colonies at the hand of man, said: *"The one process now going on that will take millions of years to correct is the loss of genetic and species diversity by the destruction of natural habitats. This is the folly our descendants are least likely to forgive us."*

An Open Letter from America

Living with GMOs: Citizen to Citizen: From 57 million citizens in the US to citizens, politicians, and regulators in the UK and the rest of the EU about the hazards of genetically modified crops⁶²

We, the undersigned, are sharing our experience and what we have learned with you so that you don't make our mistakes. Signatories include NGOs, groups, academics, scientists, farmers, food manufactures, and high profile individuals representing some 57 million Americans.

Extracts: *"A recent review found that between 1996 and 2011, farmers who planted Roundup Ready crops used 24% more herbicide than non-GMO farmers planting the same crops. This pesticide treadmill means that in the last decade in the US at least 14 new glyphosate-resistant weed species have emerged, and over half of US farms are plagued with herbicide-resistant weeds."* They outlined eight independent papers describing Environmental Harm and six about the Threat to Human Health. *"Americans are reaping the detrimental impacts of this risky and unproven agricultural technology. EU countries should take note: there are no*

⁶⁰ <https://global.oup.com/academic/product/sustaining-life-9780195175097?cc=gb&lang=en&>

⁶¹ Wilson, E.O. *Naturalist: New Edition for a New Generation*. Washington, DC: Island Press (2006).

⁶² <http://www.theletterfromamerica.org/>

benefits from GM crops great enough to offset these impacts. Officials who continue to ignore this fact are guilty of a gross dereliction of duty. We strongly urge you to resist the approval of genetically modified crops, to refuse to plant those crops that have been approved, to reject the import and/or sale of GM-containing animal feeds and foods intended for human consumption, and to speak out against the corporate influence over politics, regulation and science.

David Cameron ignored the advice from America and sent it to Defra

Lord de Mauley, the Defra Minister replied: here is the end of his letter with the usual mantra: ⁶³ *“The UK Government regards safety as paramount and we will only agree to the planting of GM crops or the marketing of GM foods if it is clear that people and the environment will not be harmed.”* Defra concealed the letter from the British public. The European Commission and the European Food Safety Authority ignored it as well and have continued to approve GM Crops for growing and for food and feed in the EU.

He also ignored the advice from the Parliamentary Environmental Audit Committee about GM crops

In May 2012, the Environmental Audit Committee (EAC) advice on GM: *“the Government should not license its commercial use in the UK nor promote its use overseas.”* In December 2013 the government dismissed that advice, but said: *“The Government takes a science-led approach to GM, and the protection of human health and the environment are our overriding priorities...”* This was precisely what the Defra Minister said. However, the Government has little care for human health or the environment: only for corporations, money, business, the economy, and austerity for the people but not for its friends.

Corporate lobbyists find it easier to access the Prime Minister than his own MPs

This is illustrated in the following article by independent journalist Jonathan Gornall, who conducted an investigation on behalf of the *British Medical Journal*.

An Editorial in the *British Medical Journal* on 11/01/2014 was entitled: A shameful episode.⁶⁴ *Documents released under a freedom of information request showed that between the coalition taking power in May 2010 and the end of 2013 the Department of Health alone had 130 meetings with representatives of the industry. The extensive investigation shows “beyond doubt that commercial interests are currently in control of key decisions about the public’s health.”*

The new Prime Minister Theresa May has already shown that she resembles the previous government in her concern for corporate profits and her lack of interest in obese children.

21/03/2016 Baroness Chisholm of Owlpen (Con): (Replying on behalf of Lord Gardiner of Kimble, the Defra spokesperson for the HOL) *My Lords, the Government support pesticide use where scientific evidence shows that this is not*

⁶³ http://beyond-gm.org/wp-content/uploads/2015/01/BGM_Defra-letter_151214.pdf

⁶⁴ <http://www.bmj.com/content/348/bmj.g110>

expected to harm people or to have unacceptable effects on the environment. UK experts participated in the European Food Safety Authority's assessment of glyphosate and support its conclusions, particularly that glyphosate does not cause cancer. The Government therefore supports the continuing approval of glyphosate.

03/06/2016 Lord Gardiner of Kimble in response to a question by the Countess of Mar

"The European Food Safety Authority concluded that glyphosate is unlikely to pose a carcinogenic hazard in humans. This conclusion followed a very thorough consideration of a wide range of scientific data, including a number of studies on laboratory animals. The mouse carcinogenicity studies were performed by independent testing laboratories and comply with the applicable OECD test guideline and Good Laboratory Practice. Carcinogenicity studies in mice are among the many EU data requirements for pesticides, and help to establish whether or not an active substance in a pesticide has carcinogenic potential. Under the regulatory system for pesticides, studies are not published because of the danger that data may be wrongly used to support other rival applications for authorisation. However, requests to view the documents can be submitted to the Health and Safety Executive's Chemicals Regulation Directorate and will be considered on a case-by-case basis."

20/05/2016 Monsanto weed killer faces recall from Europe's shops after EU fails to agree a deal⁶⁵

"Governments are beginning to understand that their citizens refuse to be treated as lab rats. Monsanto and other chemical giants are used to getting their way, but public pressure has forced politicians to stand firm behind the precautionary principle.

In the EU standing committee which failed to take a decision today, the UK strongly backed a new license for glyphosate. Germany abstained, along with Sweden and Italy. Opposition to the relicensing is thought to have been led by France, which has banned the substance."

As Europe says, the citizens of Britain being treated as lab rats

And so is the environment, as a result of farmers using massive and increasing amounts of pesticides: insecticides, fungicides, molluscicides, herbicides and seed treatments (see page 15/16). In 2015 it was reported that: *"More than 1,700 tonnes of glyphosate were sprayed on crops last year (2014) up a third on 2012, according to the Department for Environment, Food and Rural Affairs (Defra). The total area sprayed with the weed killer grew by almost 500,000 hectares to 2.1 million hectares, an area the size of Wales."*

An apocalyptic mass extinction⁶⁶

This 'new order' of mathematical ecology in the Britain has turned a whole generation of biologists away from field observations--- into an apocalyptic extinction crisis that they did not see coming---simply because no one was looking at the environment.

⁶⁵ <https://www.theguardian.com/environment/2016/may/20/monsanto-weedkiller-faces-recall-from-europes-shops-after-eu-fail-to-agree-deal>

⁶⁶ <http://www.amsi.ge/jbpc/31515/15-3-abs-5.htm>

The State of Nature September 14th 2016: Britain's wildlife 'crisis' with more than 120 species at risk of extinction due to intensive farming

"Britain's wildlife is facing a "crisis" with more than 120 species at risk of extinction due to intensive farming, a report will warn. Hundreds of the country's best-known animals - including types of woodpecker and butterfly - will have an uncertain future with some disappearing completely as their numbers decline rapidly, the State of Nature 2016 report will say." ⁶⁷

It will be published on September 14th 2016.

France has banned glyphosate but Brexit Britain plans to re-license it in agreement with Monsanto

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Swansea

Wales

UK

Submitted to the Monsanto Tribunal 23 August 2016

⁶⁷ <http://www.telegraph.co.uk/news/2016/08/21/britains-wildlife-crisis-with-more-than-120-species-at-risk-of-e/>