

"Coalition against Bayer Dangers, [www.CBGnetwork.org](http://www.CBGnetwork.org)" and Photomontage Italy



Conflicts of interest and fraud  
in the re-assessment of  
glyphosate in the EU, the UK  
and the US

**UK Parliament Meeting Brings ‘Dangers’ of Roundup® into Public Focus. This meeting of world experts on glyphosate held on June 18 2014 was not reported by the UK mainstream Media Corporations**<sup>1</sup>

The All-Party Parliamentary Group (APPG) on Agroecology, Chaired by the [Countess of Mar](#), met in the Houses of Parliament in London on June 18, 2014 to discuss the possible harm caused by the world’s most popular herbicide – Roundup®.

In what was one of the most comprehensive meetings ever held in Europe on Glyphosate and Roundup, experts from around the World gathered in London to share their expertise with the media, members of a number of UK political parties, NGO representatives and members of the general public. The interest in the event was very high and Committee Room 10 of the Houses of Parliament was full to the rafters, with experts having travelled from as far away as Russia, China and the U.S., to listen to the four speakers give detailed presentations on how the unanswered questions surrounding the possible harm caused by Glyphosate and Roundup should be approached.

The full presentations from the APPG Agroecology meeting in London are on the following links:

[Dr. Don M. Huber – Professor Emeritus of Plant Pathology at Purdue University](#)

[Professor Malcolm Hooper – Professor of Medicinal Chemistry at the University of Sunderland](#)

[Dr. John Peterson “Pete” Myers – Founder, CEO and Chief Scientist of Environmental Health Sciences](#)

[Dr. Michael Antoniou – Reader in Molecular Genetics and Head of the Gene Expression and Therapy Group, Department of Medical and Molecular Genetics, King’s College London School of Medicine, UK.](#)

**APPG Agroecology: Rounding Up Glyphosate: Is it really safe?**

**Meeting Outline:**

Glyphosate is the most widely used weed-killer in the world. In addition to its use in agriculture and horticulture<sup>2</sup> it is also used for weed control in many other circumstances, e.g. on paved surfaces.<sup>3</sup> Two uses of glyphosate greatly increase the chances that it will be ingested by humans and farm animals – to desiccate cereal, pulse and oilseed crops prior to harvest, where it produces residues in all our staple foods<sup>4</sup> and when used on Roundup Ready GM soya, maize and cotton crops. Glyphosate is being routinely detected in the blood and urine in Germany<sup>5</sup> and in 18 countries in Europe.<sup>6</sup> It has also recently been found in human breast milk<sup>7</sup> and in dairy cows in Denmark.<sup>8</sup>

**Is it really safe?**

Glyphosate is often presented as a benign chemical which is inactivated in the soil. However this is far from the case. Glyphosate interferes with enzymes in plants and microbes because

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<sup>1</sup> [http://sustainablepulse.com/2014/07/02/uk-parliamentary-meeting-brings-dangers-roundup-public-focus/#.U7TvD-j\\_hzl](http://sustainablepulse.com/2014/07/02/uk-parliamentary-meeting-brings-dangers-roundup-public-focus/#.U7TvD-j_hzl)

<sup>2</sup> <http://www.monsanto.com/products/Documents/glyphosate-background-materials/Agronomic%20benefits%20of%20glyphosate%20in%20Europe.pdf>

The Agronomic benefits of glyphosate in Europe.

<sup>3</sup> <http://www.monsanto-ag.co.uk/content.output/165/165/Roundup/Amenity/Streets%20and%20Pavements.msp>

<sup>4</sup> <http://www.pesticides.gov.uk/guidance/industries/pesticides/advisory-groups/PRI>

<sup>5</sup> <http://www.ithaka-journal.net/herbizide-im-urin?lang=e>

<sup>6</sup> <http://www.foeeurope.org/weed-killer-glyphosate-found-human-urine-across-Europe-130613>

<sup>7</sup> [http://www.momsacrossamerica.com/glyphosate\\_testing\\_results](http://www.momsacrossamerica.com/glyphosate_testing_results)

<sup>8</sup> Glyphosate in urine of cows in Denmark; metabolic changes in blood parameters including increased lipid profile marker cholesterol <http://dx.doi.org/10.4172/2161-0525.1000186>

This meeting examined how these properties of glyphosate impact on the health of humans, the soil and wildlife from residues and traces being detected in humans and the environment as use of glyphosate based weed-killers, such as Roundup, escalates.

**Four different patents have been filed and granted for glyphosate**

- As a chelator of heavy metals and a wetting agent in 1961<sup>9</sup>
- As a herbicide in 1968<sup>10</sup>
- As an antibiotic in 2002<sup>11</sup>
- As an anti-protozoal agent in 2003<sup>12</sup>

**Some Activities of Glyphosate**

- Organic phosphonate
- Persistent
- Growth regulator
- Mineral Chelater
- Virulence enhancer
- Antibiotic
- Herbicide
- Toxicant

B, Ca, Co, Cu, Fe, K, Mg, Mn, Ni, Zn

<sup>9</sup> <http://www.google.com/patents/US3160632>

<sup>10</sup> <http://www.google.com/patents/US3455675>

<sup>11</sup> <http://www.google.com/patents/US7771736>

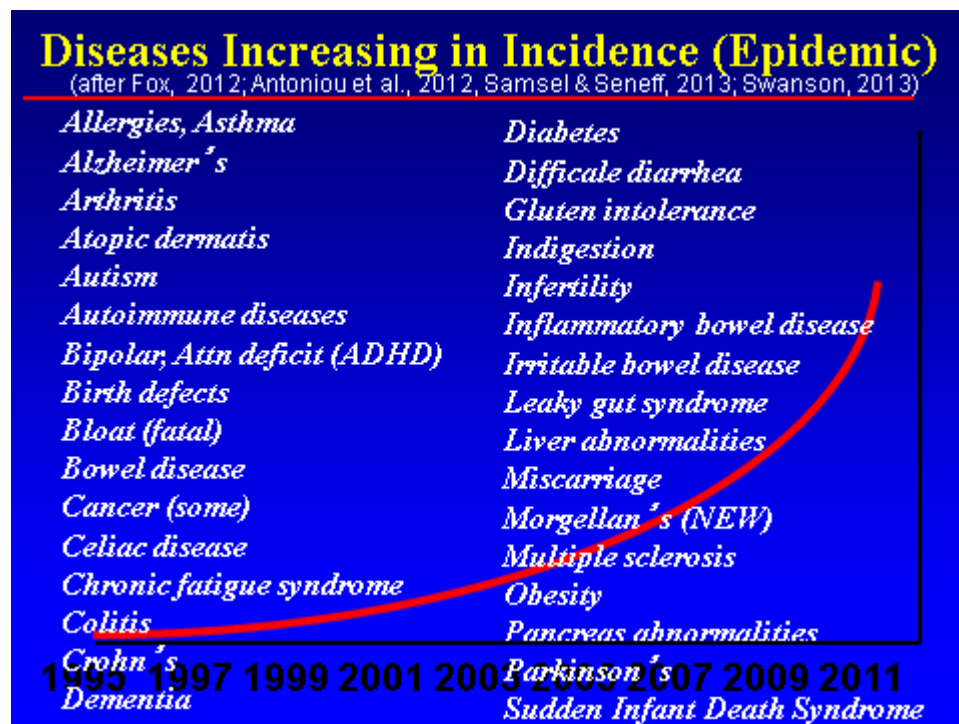
<sup>12</sup> <http://patft.uspto.gov/netacgi/nph->

[Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=%2Fnetahtml%2FPTO%2FSrchnum.htm&r=1&f=G&l=50&s1=7771736.PN.&OS=PN/7771736&RS=PN/7771736](#)

The World Health Organisation and the Chief Medical Officer for England, Professor Dame Sally Davies both declared that antibiotic-resistant diseases pose an apocalyptic threat to humans. The CMO placed the blame on vets, farmers and GPs for over-use of antibiotics. In 2013 the CMO told Parliament that this issue should be added to the national risk register of civil emergencies. When I informed her that glyphosate was an antibiotic, she replied that this was up to the pesticide regulators to decide. I wrote to inform Prof Mark Woolhouse, Professor of Infectious Disease Epidemiology at the University of Edinburgh and Dr Jeremy Farrar, Director of the Wellcome Trust when they published an article in Nature on 29/04/2014 about the Intergovernmental Panel on Antimicrobial Resistance.<sup>13</sup> An Editorial in the same journal states:<sup>14</sup> *“If the threat of antibiotic resistance is to be managed, existing drugs must be marshalled more effectively and new medicines must get to the market fast...Public education – both to restrict the waste of antibiotics and to build support for measures to restrict unnecessary use – is vital... There is no equivalent of Big Oil or Big Tobacco in this debate to delay and obfuscate.”*

My intervention must have been very unwelcome and as yet I have had no reply.

With Monsanto’s chemical (antibiotic, antiprotozoal and chelator of minerals) glyphosate, which is sold around the world by all the pesticide companies, the day of the apocalypse is getting closer.<sup>15</sup>



Dr Huber’s second slide shows diseases which have increased in incidence since 1995, correlated with the red line, which represents the increasing use of glyphosate in the US. The Cancer Research UK (CRUK) website shows similar graphs from 1975 (when glyphosate was introduced) for thyroid cancer,<sup>16</sup> breast cancer,<sup>17</sup> prostate cancer,<sup>18</sup> malignant

<sup>13</sup> <http://www.nature.com/news/policy-an-intergovernmental-panel-on-antimicrobial-resistance-1.15275>

<sup>14</sup> <http://www.nature.com/news/a-three-step-plan-for-antibiotics-1.15291>

<sup>15</sup> [http://www.naturalnews.com/044879\\_MERS\\_pandemic\\_Saudi\\_Arabia\\_drug-resistant\\_superbugs.html](http://www.naturalnews.com/044879_MERS_pandemic_Saudi_Arabia_drug-resistant_superbugs.html)

<sup>16</sup> <http://www.cancerresearchuk.org/cancer-info/cancerstats/types/thyroid/incidence/>

<sup>17</sup> <http://www.cancerresearchuk.org/cancer-info/cancerstats/types/breast/incidence/#trends>

melanoma,<sup>19</sup> liver cancer,<sup>20</sup> myeloma,<sup>21</sup> and anal cancer.<sup>22</sup> Michael Pragnell MA MBA was the founder of Syngenta and CEO of Syngenta AG based in Switzerland (from its public listing in 2000 to the end of 2007). He was appointed a Trustee of CRUK in March 2010 and Chairman in November 2010. CRUK is donating money (£450 million/year) to the Government's Strategy for UK Life Sciences<sup>23</sup> and AstraZeneca (Syngenta's parent company) is providing 22 compounds to academic research to develop medicines.

### **Conflicts of Interest and Fraud in the Re-assessment of Glyphosate**

In January 2014, the German Rapporteur Member State (RMS) submitted their draft Renewal Assessment Report (RAR) for the re-approval of glyphosate to the European Food Safety Authority (EFSA).<sup>24</sup> The RMS recommended re-approval of glyphosate for use in Europe with only minor changes; the acceptable daily intake (ADI) from 0.3 mg/kg bw/day to 0.5 mg/kg bw/day was increased. In a press release in March 2014, BfR said that glyphosate was no more poisonous than previously assumed although a critical view should be taken of certain co-formulants. This was a rather curious announcement. This was on the basis of evaluation of 150 new studies and an additional 900 studies from the scientific journals. Professor Dr Dr Andreas Hensel President of the Federal Institute of Risk Assessment (BfR) said on behalf of BfR: *These new studies do not suggest that glyphosate has carcinogenic or embryo-damaging properties or that it is toxic to reproduction **in test animals**. The data do not warrant any significant changes in the limit values of the active ingredient...* Prof Hensel continued: *Worldwide, glyphosate is one of the most common active ingredients in pesticides used to prevent unwanted plant growth in plant cultivation or to accelerate the ripening process of crops (desiccation). Glyphosate inhibits an enzyme which is essential for the biosynthesis of certain amino acids. This enzyme is not found in animals and humans.*<sup>25</sup> Several competent authorities in Germany are involved in the writing process (i.e., the Federal Institute for Risk Assessment -BfR-, the Federal Environment Agency, the Julius Kuehn-Institute and the Federal Office of Consumer Protection and Food Safety) so presumably they all believe this to be so.

### **The statement by BfR is incorrect: glyphosate poisons humans in the same way as it poisons plants**

- Humans and animals have exactly the same pathway as in plants; mammals can only absorb nutrition via the bacteria in their gut; the gut microbiome. **The gut microbiome is the collective genome of organisms inhabiting our body.** Glyphosate residues in food disrupt the pathway which involves 5-enolpyruvylshikimate-3-phosphate synthase. Beneficial bacteria are destroyed, causing inflammatory changes in the gut lining, destroying its absorptive capacity in

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<sup>18</sup> <http://www.cancerresearchuk.org/cancer-info/cancerstats/types/prostate/incidence/uk-prostate-cancer-incidence-statistics#trends>

<sup>19</sup> <http://www.cancerresearchuk.org/cancer-info/cancerstats/types/skin/incidence/uk-skin-cancer-incidence-statistics#trends>

<sup>20</sup> <http://www.cancerresearchuk.org/cancer-info/cancerstats/types/liver/incidence/#trends>

<sup>21</sup> <http://www.cancerresearchuk.org/cancer-info/cancerstats/types/myeloma/incidence/#trends>

<sup>22</sup> <http://www.cancerresearchuk.org/cancer-info/cancerstats/types/anal-cancer/Incidence/#Trends>

<sup>23</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/32457/11-1429-strategy-for-uk-life-sciences](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32457/11-1429-strategy-for-uk-life-sciences)

<sup>24</sup> [http://www.bfr.bund.de/en/the\\_bfr\\_has\\_finalised\\_its\\_draft\\_report\\_for\\_the\\_re\\_evaluation\\_of\\_glyphosate-188632.html](http://www.bfr.bund.de/en/the_bfr_has_finalised_its_draft_report_for_the_re_evaluation_of_glyphosate-188632.html)

<sup>25</sup> [http://www.bfr.bund.de/en/press\\_information/2014/03/glyphosate\\_no\\_more\\_poisonous\\_than\\_previously\\_assumed\\_although\\_a\\_critical\\_view\\_should\\_be\\_taken\\_of\\_certain\\_co\\_formulants-188898.html](http://www.bfr.bund.de/en/press_information/2014/03/glyphosate_no_more_poisonous_than_previously_assumed_although_a_critical_view_should_be_taken_of_certain_co_formulants-188898.html)



humans and animals, chelating (extracting or grabbing) minerals, depleting micronutrients and interfering with multiple metabolic processes resulting in obesity, type 2 diabetes, autism, dementia, cancers, inflammatory bowel diseases (Ulcerative Colitis and Crohn's disease), celiac disease, hypercholesterolaemia and many other disorders associated with those on a Western diet.<sup>26</sup> Chatelier, E.L. *et al.* Richness of human gut microbiome correlates with metabolic markers *Nature* 29 August 2013; 500: 541-550.<sup>27</sup> “We are facing a global metabolic health crisis provoked by an obesity epidemic.” In a multi-author study of obese and non-obese individuals, those with “low bacterial richness in the gut (23% of the population) are characterized by more marked overall adiposity, insulin resistance and dyslipidaemia and a more pronounced inflammatory phenotype when compared with those with high bacterial richness...Low richness of gut microbiota has been reported in patients with inflammatory bowel disorder...Also notable diversity differences were observed between the urban US population and rural populations from two developing countries”. Current research is underway to try to find the links between obesity, type 2 diabetes and cancers. Diet rapidly and reproducibly alters the human gut microbiome<sup>28</sup> “Long-term dietary intake influences the structure and activity of the trillions of microorganisms residing in the human gut”... In concert, these results demonstrate that the gut microbiome can rapidly respond to altered diet, potentially facilitating the diversity of human dietary lifestyles.

### **The Institute of Science in Society (I-SIS) has published a document: Scandal of Glyphosate Re-assessment in Europe<sup>29</sup>**

They concluded that: *It is Monsanto and a Consortium of European Chemical Companies that performed the risk assessment for the re-approval of glyphosate...the Glyphosate Task Force (GTF)*<sup>30</sup> *took all of the peer-reviewed studies and proceeded to find excuses to throw out the ones that didn't agree with the already-accepted industry studies... Most importantly they dismissed any Reports that suggested birth defects or cancers in humans or anything that showed that glyphosate accumulated in the body of humans or animals.* Dr Nancy Swanson has studied the 15 volume, 3,744 pp Renewal Assessment Report (RAR) and published a synopsis of the toxicology sections.<sup>31</sup>

### **How did the Rapporteur Member State (RMS), Germany and EFSA recommend re-approval despite multiple papers showing harm to humans and farm animals?**

Examination of one of the 15 RAR volumes<sup>32</sup> shows studies that were not included in the re-assessment were highlighted in yellow.

The German RMS (or GTF as it transpires) has excluded papers on the following topics:

- Evidence of diseases in humans and animals in South America<sup>33</sup> associated with GMO agriculture and Monsanto's Roundup® Ready Soy; (reproductive problems, birth defects, DNA changes and cancers.)

<sup>26</sup> <http://www.mdpi.com/1099-4300/15/4/1416>

<sup>27</sup> <http://www.nature.com/nature/journal/v500/n7464/abs/nature12506.html>

<sup>28</sup> <http://www.nature.com/nature/journal/vaop/ncurrent/full/nature12820.html>

<sup>29</sup> [http://www.i-sis.org.uk/Scandal\\_of\\_Glyphosate\\_Reassessment\\_in\\_Europe.php](http://www.i-sis.org.uk/Scandal_of_Glyphosate_Reassessment_in_Europe.php) h

<sup>30</sup> <http://www.glyphosatetaskforce.org/> The Glyphosate Task Force is a consortium of 23 corporations. Their sole aim is to achieve re-registration of glyphosate in Europe.

<sup>31</sup> [https://www.academia.edu/7595699/Glyphosate\\_re-assessment\\_in\\_Europe\\_is\\_corrupt\\_Toxicology](https://www.academia.edu/7595699/Glyphosate_re-assessment_in_Europe_is_corrupt_Toxicology)

<sup>32</sup> GLYPHOSATE\_RAR\_40\_list of studies



*A baby with a neural tube defect; this is a meningo-myelocoele. More extensive defects can occur. Hospital de Posadas, Misiones, Argentina. Photograph by kind permission of Dr Graciela Gomez.*

- **Abstract:** *In South America, the incorporation of genetically modified organisms (GMO) engineered to be resistant to pesticides changed the agricultural model into one dependent on the massive use of agrochemicals. Different pesticides are used in response to the demands of the global consuming market to control weeds, herbivorous arthropods, and crop diseases. Here, we review their effects on humans and animal models, in terms of genotoxicity, teratogenicity, and cell damage. We also stress the importance of biomarkers for medical surveillance of populations at risk and propose the use of biosensors as sensitive resources to detect undesirable effects of new molecules and environmental pollutants. The compatibility of glyphosate, the most intensively used herbicide associated to GMO crops, with an integrated pest management for soybean crops, is also discussed.*
- A report of the many types of birth defects in seven geographical areas of Argentina has also been excluded. **Abstract:** <sup>34</sup> *High frequencies regional analysis showed the following significant results: severe hypospadias; spina bifida, microtia, cleft lip with cleft palate, polycystic kidney, postaxial polydactyly and Down syndrome; postaxial polydactyly; omphalocele, gastroschisis, cleft lip without cleft palate, cleft lip with cleft palate, anorectal atresia/stenosis, indeterminate sex, preaxial polydactyly and pectoral agenesis; cleft lip without cleft palate.*
- The original paper from Prof Andr s Carrasco's Embryology Department in Buenos Aires which described teratogenic effects (neural tube defects) in frog and chick embryos exposed to low dose glyphosate **was** considered.<sup>35</sup> But this is what the RMS said about it: *"Not reliable. Non-guideline study that is not sufficiently described for assessment. Inadequate positive and negative control experiments. Not relevant. Irrelevant routes of exposure and inappropriately high doses. Test system not adequate for human risk assessment."*
- However, a Medical Enquiry has at last been announced in Argentina into the effects on human health of glyphosate in GMO systems of agriculture. The problems were

<sup>33</sup> Lopez, S.L. *et al* GMO Pesticides Used in South American GMO-Based Agriculture: A Review of Their Effects on Humans and Animal Models. In *Advances in Molecular Toxicology*, Vol. 6, 201 published by Elsevier: ISSN 1872-0854.

<sup>34</sup> <http://www.ncbi.nlm.nih.gov/pubmed/21132229> [Births prevalence of 27 selected congenital anomalies in 7 geographic regions of Argentina]. [Campa a H et al.](#)

<sup>35</sup> Paganelli, A. *et al.* Glyphosate-Based Herbicides Produce Teratogenic Effects on Vertebrates by Impairing Retinoic Acid Signaling *Chem. Res. Toxicol.*, 2010, 23 (10), 1586–1595. DOI: 10.1021/tx1001749 <http://pubs.acs.org/doi/abs/10.1021/tx1001749>

investigated on BBC Radio 4.<sup>36</sup> Prof Andr s Carrasco, who had been a member of Conicet, the National Scientific and Technical Research Council – Argentina, had continually challenged Monsanto and the pesticide regulators. **He would have been a key witness.** However, he died on May 10<sup>th</sup> 2014 at the age of 67, in the period between his giving evidence to Linda Pressly and when the BBC Radio 4 programme was broadcast on May 14<sup>th</sup>. These are the Roundup® Ready GMO crops that the British Government is trying to force upon an unwilling British public.

- Other papers with evidence of Roundup® and birth defects in humans.<sup>37</sup> In Teratogenic effects of glyphosate-based herbicide: divergence of Regulatory Decisions from Scientific Evidence.<sup>38</sup> Prof Michael Antoniou (from the Department of Genetics at King's College London) as lead author, and a multinational team, had managed to obtain a copy of the German DAR. They pointed out that evidence of teratogenicity had been found, but the German and EU authorities minimized these findings in their assessment and set a potentially unsafe acceptable daily intake (ADI) level for glyphosate.
- Any papers in which glyphosate or AMPA was detected in human urine; e.g. samples in Germany<sup>39</sup> and in the whole of Europe.<sup>40</sup> This means that Monsanto can maintain the claim of no accumulation, which they did in the 2002 EU reassessment. Moms Across America commissioned independent studies and found glyphosate in breast milk, urine and water.<sup>41</sup>
- All of Prof Monika Kr ger's (Leipzig Veterinary Laboratory) findings of glyphosate in animals<sup>42</sup> and humans, in sick animals and humans (Dairy cows in Germany had botulism<sup>43</sup>) and dairy cows in Denmark<sup>44</sup> which had evidence of liver and kidney dysfunction as well as glyphosate in their urine. There are many, so we provide only a few examples, but you can see this video of a German farmer whose cows had glyphosate in their urine and faeces and died from botulism.<sup>45</sup> In a mega dairy in Wales 70 cows died from botulism in May 2014.
- A combined study between researchers in the US and Australia from Carman & Vlieger<sup>46</sup> was a long-term toxicology study on pigs fed a combined genetically modified (GM) soy and GM maize diet. GM-fed females had on average a 25% heavier uterus than non-GM-fed females, a possible indicator of disease that requires further investigation. Also, the level of severe inflammation in stomachs was markedly higher in pigs fed on the GM diet.

<sup>36</sup> <http://www.bbc.co.uk/programmes/b042ldz0>

<sup>37</sup> <http://www.earthopensource.org/files/pdfs/Roundup-and-birth-defects/RoundupandBirthDefectsv5.pdf>

<sup>38</sup> Antoniou, M. *et al.* Teratogenic Effects of Glyphosate-Based Herbicides: Divergence of Regulatory Decisions from Scientific Evidence *J Environ Anal Toxicol* 2012, S:4 <http://dx.doi.org/10.4172/2161-0525.S4-006>

<sup>39</sup> A study has shown the presence of glyphosate in human urine in urban populations in Germany.

<http://www.ithaka-journal.net/herbizide-im-urin?lang=e>

<sup>40</sup> <http://www.foeeurope.org/weed-killer-glyphosate-found-human-urine-across-Europe-130613>

<sup>41</sup> [http://www.momsacrossamerica.com/glyphosate\\_testing\\_results](http://www.momsacrossamerica.com/glyphosate_testing_results)

<sup>42</sup> Kr ger, M. *et al.* Glyphosate suppresses the antagonistic effect of *Enterococcus* spp. on *Clostridium botulinum*. *Anaerobe* 2013, Feb 6.

<sup>43</sup> <http://www.ncbi.nlm.nih.gov/pubmed/22200452> Kr ger M *et al.* Visceral botulism at dairy farms in Schleswig Holstein, Germany: prevalence of *Clostridium botulinum* in feces of cows, in animal feeds, in feces of the farmers, and in house dust.

<sup>44</sup> Glyphosate in urine of cows in Denmark; metabolic changes in blood parameters including increased lipid profile marker cholesterol <http://dx.doi.org/10.4172/2161-0525.1000186> This is the first study showing the extent of the exposure to glyphosate of Danish dairy cattle and its impact on different blood parameters.

<sup>45</sup> [http://www.youtube.com/watch?v=iVjLtG3tn\\_E](http://www.youtube.com/watch?v=iVjLtG3tn_E)

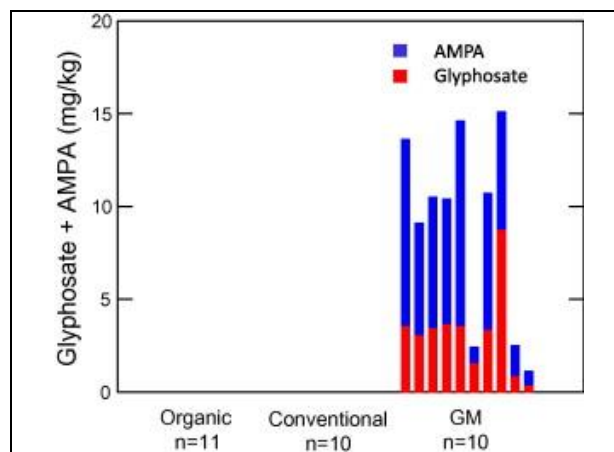
<sup>46</sup> <http://www.organic-systems.org/journal/81/8106.pdf>





A deformed piglet; Siamese twins. The sow had been fed on GM Soya.  
Photograph by kind permission of Ib Borup Pedersen, Denmark.

- Prof Thomas Bøhn's paper from Norway which found that GM soya is not 'substantially equivalent' to non-GM was ignored.<sup>47</sup> This paper describes the nutrient and elemental composition, including residues of herbicides and pesticides, of 31 soy bean batches from Iowa, USA. In a commentary on the paper Bøhn wrote: **“Extreme Levels” of Roundup® in Food Became the Industry Norm:**<sup>48</sup> *“Roundup® Ready GM-soy accumulates residues of glyphosate and aminomethylphosphonic acid (AMPA) and GM soy also differs markedly in nutritional composition compared with soybeans from other agricultural practices. Organic soybean samples also showed a more healthy nutritional profile (e.g. higher in protein and lower in saturated fatty acids) than both industrial conventional and GM soybeans. Lack of data on pesticide residues in major crop plants is a serious gap of knowledge with potential consequences for human and animal health. How is the public to trust a risk assessment system that has overlooked the most obvious risk factor for herbicide tolerant GM crops, i.e. high residue levels of herbicides, for nearly 20 years? If it has been due to lack of understanding, it would be bad. If it is the result of the producer's power to influence the risk assessment system, it would be worse.”*



From: Compositional differences in soybeans (Organic, Conventional and GM.) from Iowa, USA. Diagram by kind permission of Professor Thomas Bøhn, Genøk, Centre for Biosafety, Norway.

<sup>47</sup> <http://www.sciencedirect.com/science/article/pii/S0308814613019201> Compositional differences in soybeans on the market: glyphosate accumulates in Roundup Ready GM soybeans.

<sup>48</sup> <http://www.independentsciencenews.org/news/how-extreme-levels-of-roundup-in-food-became-the-industry-norm/>

- Laboratory studies which showed that Formulated Roundup® affects cell cycle regulation<sup>49</sup> and activates DNA-Response checkpoint.<sup>50</sup>
- All papers involving testing of formulated chemicals (e.g. Roundup®), (secret ingredients that help the chemicals penetrate the plant) which show far more toxicity than glyphosate alone.<sup>51</sup>
- Samsel & Seneff's two papers<sup>52,53</sup> did not feature at all despite assurances from the Defra Minister that they would be submitted to BfR.<sup>54</sup> Glyphosate's Suppression of Cytochrome P450 Enzymes and Amino Acid Biosynthesis by the Gut Microbiome: Pathways to Modern Diseases. In the first paper they explain the metabolic mechanisms of glyphosate. Three key problems caused by glyphosate in the diet are nutritional deficiencies, especially minerals and essential amino-acids, systemic toxicity and an inability for the liver to detoxify xenobiotics (foreign chemicals in the body such as antibiotics, vaccines, dioxins, synthetic organochlorines, substances in sewage treatment plants etc.)  
Glyphosate, pathways to modern diseases II: Celiac sprue and gluten intolerance.<sup>55</sup>  
Abstract: *"Celiac disease, and, more generally, gluten intolerance, is a growing problem worldwide, but especially in North America and Europe, where an estimated 5% of the population now suffers from it. Symptoms include nausea, diarrhea, skin rashes, macrocytic anemia and depression. It is a multifactorial disease associated with numerous nutritional deficiencies as well as reproductive issues and increased risk to thyroid disease, kidney failure and cancer. Here, we propose that glyphosate, the active ingredient in the herbicide, Roundup®, is the most important causal factor in this epidemic. Fish exposed to glyphosate develop digestive problems that are reminiscent of celiac disease. Celiac disease is associated with imbalances in gut bacteria that can be fully explained by the known effects of glyphosate on gut bacteria. Characteristics of celiac disease point to impairment in many cytochrome P450 enzymes, which are involved with detoxifying environmental toxins, activating vitamin D3, catabolizing vitamin A, and maintaining bile acid production and sulfate supplies to the gut. Glyphosate is known to inhibit cytochrome P450 enzymes.*

<sup>49</sup> Marc, J., Mulner-Lorillon, O., Bellé, R. Glyphosate-based pesticides affect cell cycle regulation.

<http://www.ncbi.nlm.nih.gov/pubmed/15182708>

<sup>50</sup> Marc, J., Bellé, R. Formulated Glyphosate Activates the DNA-Response Checkpoint of the Cell Cycle Leading to the Prevention of G2/M Transition Toxicological Sciences 2004, 82 (2): 436-442.

<http://toxsci.oxfordjournals.org/content/82/2/436.full.pdf>

<sup>51</sup> A further independent paper published in December 2013 showed that: "Roundup® was by far the most toxic among the herbicides and insecticides tested. Most importantly, 8 formulations out of 9 were several hundred times more toxic than their active principle. <http://www.hindawi.com/journals/bmri/aip/179691/>

<sup>52</sup> Glyphosate's Suppression of Cytochrome P450 Enzymes and Amino Acid Biosynthesis by the Gut Microbiome: Pathways to Modern Diseases. <http://www.mdpi.com/1099-4300/15/4/1416>

<sup>53</sup> Glyphosate, pathways to modern diseases II: Celiac sprue and gluten intolerance.

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3945755/>

<sup>54</sup> RM has a copy of a letter sent by Lord de Mauley and the CRD to Lord Hylton which says: "The review paper by Samsel and Seneff referred to by Dr Mason suggests possible links between exposure to glyphosate and a wide range of human diseases. CRD notes that many of the proposed associations between glyphosate and human disease seem hypothetical rather than being based on convincing evidence to support cause and effect." Nevertheless the CRD had agreed to submit this paper to Germany, the Rapporteur Member State for glyphosate for its review of the chemical.

<sup>55</sup> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3945755/>

*Deficiencies in iron, cobalt, molybdenum, copper and other rare metals associated with celiac disease can be attributed to glyphosate's strong ability to chelate these elements. Deficiencies in tryptophan, tyrosine, methionine and selenomethionine associated with celiac disease match glyphosate's known depletion of these amino acids. Celiac disease patients have an increased risk to non-Hodgkin's lymphoma, which has also been implicated in glyphosate exposure. Reproductive issues associated with celiac disease, such as infertility, miscarriages, and birth defects, can also be explained by glyphosate. Glyphosate residues in wheat and other crops are likely increasing recently due to the growing practice of crop desiccation just prior to the harvest. We argue that the practice of "ripening" sugar cane with glyphosate may explain the recent surge in kidney failure among agricultural workers in Central America.*<sup>56</sup> *We conclude with a plea to governments to reconsider policies regarding the safety of glyphosate residues in foods.*

- In 2012, Séralini's team performed 24 month feeding studies in rats (GM Roundup® Ready maize, also with Roundup® separately) instead of Monsanto and EFSA's 90 days. Séralini's team found disturbances of liver and kidney function. Tumours started to grow in males at 4 months (mostly renal) and females (mostly mammary) and there was evidence of endocrine disruption. (Endocrine disruption had already been reported with glyphosate.) Here is a 12-minute YouTube made by Séralini's team over the 2-year period of testing in rats.

[http://www.youtube.com/watch?v=Njd0RugGjAg&feature=player\\_embedded](http://www.youtube.com/watch?v=Njd0RugGjAg&feature=player_embedded)

Fourteen months after publication and following the appointment of a Monsanto Scientist to the *Journal of Food and Chemical Toxicology* (FCT), the paper was withdrawn.

### **European Network of Scientists for Social and Environmental Responsibility (ENSSER)<sup>57</sup>**

ENSSER condemned the move: *"In short, the decision to retract Séralini's paper is a flagrant abuse of science and a blow to its credibility and independence. It is damaging for the reputation of both the journal Food and Chemical Toxicology and its publisher Elsevier. It will decrease public trust in science. And it will not succeed in eliminating critical independent science from public view and scrutiny. Such days and times are definitively over. Prof. Séralini's findings stand today more than before, as even this secret review found that there is nothing wrong with technicalities, conduct or transparency of the data – the foundations on which independent science rests. The conclusiveness of their data will be decided by future independent science, not by a secret circle of people."*

Séralini was finally granted a right of reply in the *Journal of Food and Chemical Toxicology* (FCT).<sup>58</sup> Conclusiveness of toxicity data and double standards.

### **My complaints to the European Ombudsman about EFSA's Chief Attorney's failure to reply to my emails of 22/10/2012 and 13/12/2013**

On 20/05/2014 I asked the European Ombudsman to re-open our complaint 1089/2012/BEH giving her 12 reasons. On 04/07/2014, she rejected my complaints on the grounds that *"the Ombudsman's mandate only covers EU institutions, bodies, offices and agencies."*

<sup>56</sup> <http://www.nature.com/ki/journal/v68/n97s/full/4496413a.html>

<sup>57</sup> <http://www.ensser.org/democratising-science-decision-making/ensser-comments-on-the-retraction-of-the-seralini-et-al-2012-study/>

<sup>58</sup> <http://www.sciencedirect.com/science/article/pii/S0278691514002002>

In fact, I had sent a document on 22<sup>nd</sup> October 2012 to Dirk Detken, Chief Attorney for the European Food Safety Authority, Subject: EFSA and the Séralini paper on rat tumours.

*“Dear Mr Detken*

*I have been following the argument about the science and statistics of the Séralini study (on GM Roundup Ready Maize and rat tumours) between GM industry scientists and independent ones with mounting incredulity. I am not a toxicologist or a statistician. I am a medical doctor. As Senior Attorney to EFSA, I presume that your CEO Ms Catherine Geslain-Lanuëlle must, on occasions, take your advice. Perhaps you would like to point out to her the trail of disasters to human health and the environment that has followed the planting of GM maize and Roundup Ready® crops in both Latin America and the US since they were first grown in 1996. These statistics are real, not theoretical laboratory ones. Are these the disasters that she would want to see repeated in Europe? Does she want to reject outright the Séralini study on rats and continue to insist that 90 days testing is adequate for the registration of GM crops? The first rat tumours in Séralini’s study appeared in males at 4 months ...”*<sup>59</sup>

Having received no reply I sent another email to Dirk Detken on 13 December 2013 (which I attach). I had also attached a document: Corporate Espionage: The Séralini Affair and Beyond.<sup>60</sup> I gave an account of the hacking of my email on 15<sup>th</sup> November 2013, and removal of 3-years-worth of SENT emails and deletion of contacts. (Contacts were restored by the server, but the emails were not.) I wrote: *“I believe that this constitutes a criminal offence under the Regulating of Investigating Powers Act 2000 Section 1: Unlawful Interception.”*<sup>61</sup> Is it significant that in December 2013, the German Rapporteur Member State for Reassessment of Glyphosate in Europe (BfR) had just finalised its Draft Reassessment<sup>62</sup> and had given it a clean bill of health?

### **Personal attacks on those who exposed the science of GM as being dangerous to human health**

Dr Brian John of GM-Free Cymru wrote:<sup>63</sup> *“For more than a decade now, scientists working in the GM field have mounted vicious personal attacks (sometimes politically rather than scientifically motivated) upon serious scientists who have had the temerity to discover ‘uncomfortable things about GM crops and foods.’ This trend started with the vitriolic treatment meted out (with the Royal Society in the vanguard) on Arpad Pusztai and Stanley Ewen a decade ago, and continued with the crucifixion of Ignacio Chapela and David Quist, Angelika Hilbeck, Mae-wan Ho, Judy Carman, Gilles-Eric Séralini, Andrés Carrasco, Manuela Malatesta, Christian Velot, Irina Ermakova and many others.”* These people have been severely punished by the Agrochemical Corporations, presumably as a warning to others.

### **Republication of the Séralini study in a new journal: Science speaks for itself**

Press release: GMOSeralini.org, 24 June 2014. Séralini and colleagues republished their 2 year study of GMO maize and Roundup® in rats in *Environmental Science Europe* by the Springer Group, together with its raw data.<sup>64</sup> The team described the attacks they received in

<sup>59</sup> <http://gmandchemicalindustry9.wordpress.com/european-food-safety-authority-and-the-seralini-paper-on-rat-tumours/>

<sup>60</sup> <https://independent.academia.edu/RosemaryMason>

<sup>61</sup> <http://www.legislation.gov.uk/ukpga/2000/23/contents>

<sup>62</sup> [http://www.bfr.bund.de/en/the\\_bfr\\_has\\_finalised\\_its\\_draft\\_report\\_for\\_the\\_re\\_evaluation\\_of\\_glyphosate-188632.html](http://www.bfr.bund.de/en/the_bfr_has_finalised_its_draft_report_for_the_re_evaluation_of_glyphosate-188632.html)

<sup>63</sup> [http://www.gmfrecymru.org/open\\_letters/Open\\_letter26Jan2011.html](http://www.gmfrecymru.org/open_letters/Open_letter26Jan2011.html)

<sup>64</sup> <http://www.enveurope.com/content/26/1/14>



2012 when it was first published in the *Journal of Food & Chemical Toxicology*, from those with conflicting interests, including the Science Media Centre. Reported around the world, it received minimal publicity in the UK. The Science Media Centre, a Centre to which British journalists flock when they wish to receive ‘expert’ advice, has funding from industry. The Corporate Press ignored it and BBC online dismissed it.<sup>65</sup>

This was the statement Séralini's team made in 2014: *'Roundup leads to severe hepato-renal deficiencies and sex- dependent hormone effects such as mammary tumours from very low environmental levels.'* The ‘sex-dependency’ is confirmed by the CRUK figures for thyroid cancer<sup>66</sup> which shows a marked increase in thyroid cancer in females compared with males; that death rates from malignant melanoma are 70 per cent higher in men than women,<sup>67</sup> despite similar numbers being diagnosed with the disease each year; and the incidence of liver cancer in men is more than twice that in women.<sup>68</sup>

### **Non-declaration of interests**

The British Media: On 23/06/2014, the day before the Séralini Press Conference, Matt Ridley wrote an article in the Times, the Murdoch-owned businessmen’s paper. Eat up your GM crops. They’re good for you.<sup>69</sup>

*“Genetically modified foods are cheaper to grow, need fewer pesticides and can be enriched with anti-cancer agents. The news that Britain could soon grow genetically modified crops commercially is a victory for common sense over irrational opportunism, and also for the environment over pollution. Under pressure from the European Union’s health and consumer commissioner, Tonio Borg, and Britain’s environment secretary, Owen Paterson, the EU is on the brink of ceding control of the issue to national governments. That suits countries such as France and Austria who are implacably opposed to GM crops, and Britain, which is not.”* Using a series of unsubstantiated and unreferenced claims about GM crops and with a picture of a purple tomato, Matt Ridley failed to reveal that his sister Rose is married to Owen Paterson.

(I add to that list of two; many of the other countries that have banned, or are in the process of banning, GM Crops: Germany, Switzerland, Denmark, Sweden, Norway, Italy, Hawaii, Peru, Mexico, Russia and China. Even the USDA is having its doubts because of the problems of weed resistance. So if the UK has been given the impression by Monsanto that it can sell to global markets, it has been misled.) The Editor of the Times, John Witherow cannot have been unaware of the fact that Matt Ridley, aka Viscount Matthew Ridley, was Chairman of Northern Rock between 2004 and 2007. He resigned due to the Bank’s financial problems; and according to the Parliamentary Treasury Select Committee:<sup>70</sup> *“The directors pursued a reckless business model which was excessively reliant on wholesale funding”*. Northern Rock was the first Bank to be bailed out by the UK Government.<sup>71</sup>

According to John Rees:<sup>72</sup> *“Support for the banking sector in France was just 20% of national wealth; in Germany, 25%. Even in the US where the crisis began, it was only 35%.*

<sup>65</sup> <http://www.gmoseralini.org/republication-seralini-study-science-speaks/>

<sup>66</sup> <http://www.cancerresearchuk.org/cancer-info/cancerstats/types/thyroid/incidence/>

<sup>67</sup> <http://www.cancerresearchuk.org/cancer-info/cancerstats/types/skin/incidence/#trends>

<sup>68</sup> <http://www.cancerresearchuk.org/cancer-info/cancerstats/types/liver/incidence/#trends>

<sup>69</sup> <http://www.thetimes.co.uk/tto/opinion/columnists/article4127014.ece>

<sup>70</sup> <http://www.publications.parliament.uk/pa/cm200708/cmselect/cmtreasy/56/5603.htm>

<sup>71</sup> <http://www.telegraph.co.uk/news/politics/9853874/Former-Northern-Rock-chairman-elected-to-House-of-Lords.html>

<sup>72</sup> <http://thepeoplesassembly.org.uk/john-rees-on-the-today-programme-edited-by-pj-harvey/>



*But in the UK, the government pumped money into the banks that was worth nearly 90% of our national wealth.”...The links between the City and Parliament are as strong as ever. Some 68 MPs and Lords have controlling interests or directorships in corporations linked to tax havens. At a time when privatisation of the NHS is being debated, over 75 MPs have business interests directly linked to private pharmaceutical firms...The City is crash-prone debt generator. It is an engine of inequality. It blights the city.”*

### **What is the London Science Media Centre?**

Colin Macilwain, a science policy writer from Edinburgh who has worked as a reporter and an editor from both sides of the Atlantic<sup>73</sup> wrote about plans to replicate Britain's Science Media Centre (SMC) in the United States, which he said was “*fraught with danger*.”

To quote: “*The London SMC was set up because UK scientific leaders were upset that environmentalists had successfully fought the introduction of genetically modified food; they felt that the UK media were too susceptible to environmental scare stories about new technologies.*

*Despite the fears of the SMC founders, the British press — led by the BBC, which treats the Confederation of British Industry with the deference the Vatican gets in Rome — is overwhelmingly conservative and pro-business in its outlook. It is quite unperturbed by the fact that SMC sponsors include AstraZeneca, BP, Coca-Cola, L'Oreal, Monsanto, Syngenta (as well as Nature Publishing Group) but not a single environmental non-governmental organization (NGO) or trade union. Fiona Fox, the SMC's director, says that the centre operates independently of its sponsors and points out that none (except its host, the Wellcome Trust) accounts individually for more than 5% of its income. She adds that no NGOs are involved because it was their public-relations skills that the founders of the SMC sought to match.”*

Macilwain goes on to say: “*But the perception that the environmental group Friends of the Earth constitutes a bigger threat to scientific truth-telling than some of the corporate names on the SMC's sponsorship list is not one the US media would accept.*

*Some of those considering a US centre share these concerns. They think that their funding model will have to rely on charitable trusts, not companies or government agencies.”*

### **The Science Media Centre reacted as it did last time. Had it read the Press Release Kit? June 24, 2014 Expert reaction to republication of Séralini study on Roundup-tolerant GM maize<sup>74</sup>**

*“Environmental Sciences Europe re-published a study retracted from Food and Chemical Toxicology by Gilles-Eric Séralini which purported to show rats fed the herbicide Roundup and Roundup-tolerant GM maize developed “cancerous” tumours”. NB: Séralini never used the word **Cancer**.*

### **Who were these ‘independent experts’ to which the British Press immediately turned for an opinion?**

Professor Joe N. Perry, Visiting Professor of Biometry, University of Greenwich who just happens to be **Chairman of EFSA's GMO Panel**. He left Rothamsted in July 2006 and has been permanently employed on various GMO Committees, until he took over from Harry Kuiper in 2012 as Chairman of the GMO panel. Prof Perry states at the bottom of Page 2 of his EFSA CV: *In terms of time, over 98% of my working time consists of advisory work as an*

<sup>73</sup> go.nature.com/klnuna World View Nature 15<sup>th</sup> March 2012

<sup>74</sup> <http://www.sciencemediacentre.org/expert-reaction-to-republication-of-seralini-study-on-roundup-tolerant-gm-maize/>

expert on the GMO panel of EFSA, which is ongoing since 2006. For this I receive only expenses.”

According to Prof Perry: “This paper appears to be based on the same data as Seralini’s previous 2012 paper, with no real new information and only minor rephrasing and a few new references. Therefore, I doubt whether my conclusions would differ from those of the vast majority of independent members of the scientific community, who concluded in 2012 that there was insufficient evidence to justify the claims of CRIIGEN and Giles-Eric Seralini. However, I do welcome Seralini’s promise to publish his raw data and my hope is that all organisations involved in GM risk assessment will, wherever possible in the future, publish in full their raw data in the spirit of full transparency and openness.”

#### **Declared interests**

None declared

Prof Tom Sanders, Professor of Nutrition & Dietetics, King’s College London, said:

“Republishing data that was faulty in the first place in study design and analysis does not provide redemption. Furthermore, it is now possible to publish almost anything in Open Access journals! “Seralini did not follow conventional methods for assessing animal toxicity and made most of the measurements at the end of life. When a (sic) very large number of measurements are made statistically significant differences will occur play of chance. The figures of an animal with a large tumour serve no scientific purpose. There are numerous omissions of probabilities which could lead the less critical reader to infer differences that are not statistically significant.

I asked Prof Sanders what a Professor of Nutrition and Dietetics was doing reporting as an expert on GMOs for the Science Media Centre: He replied: “ I have no further comments regard Seralini than to the Science media centre which was about the quality of science and the statistical analyses which Prof Spiegelhalter agreed. ”

Prof David Spiegelhalter, Winton Professor of the Public Understanding of Risk, University of Cambridge, said: “The article still does not appear to have had proper statistical refereeing, and the methods and reporting are obscure. The claimed effects show no dose-response, and so the conclusions rest entirely on a comparison with ten control rats of each sex. This is inadequate...The study needs replicating by a truly independent laboratory using appropriate sample sizes. I agree with the authors that this whole area would benefit from greater transparency of data and improved experimental and statistical methods”

Prof Spiegelhalter is a statistician, not an expert on GMOs. His personal home page is voluminous.<sup>75</sup> It includes: “I have acted as a paid statistical consultant to a variety of organisations, including the Healthcare Commission, World Anti-Doping Agency, Novartis, and GlaxoSmithKline (GSK). ” On 2<sup>nd</sup> July 2012, GSK pleaded guilty to criminal charges and agreed to a \$3 billion settlement of the largest health-care fraud case in the U.S. and the largest payment by a drug company. The settlement is related to the company's illegal promotion of prescription drugs, its failure to report safety data, bribing doctors, and promoting medicines for uses for which they were not licensed.<sup>76</sup> GSK is now looking into claims that it hired 16 Iraqi government doctors and pharmacists to improperly boost its sales.<sup>77</sup> This was after Chief Executive Sir Andrew Witty, who was [paid £6.5m last year](#), had promised to root out corruption and said the company would stop paying doctors to promote drugs.

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<sup>75</sup> <http://www.statslab.cam.ac.uk/Dept/People/Spiegelhalter/davids.html>

<sup>76</sup> <http://www.bloomberg.com/news/2012-07-02/glaxosmithkline-agrees-to-pay-3-billion-in-u-s-drug-settlement.html>

<sup>77</sup> <http://www.theguardian.com/business/2014/apr/07/glaxosmithkline-inquiry-over-bribery-allegations>

**Are we living in a democracy when the British Government ignores the wishes of the majority of the public about GM and teams up with Monsanto to sue civil society?**

*"Another survey has shown that only 21% of the UK public support genetically engineered food. Despite a massive pro-GM push by government, researchers and the media this latest poll carried out in June - confirms that UK citizens continue to reject the technology."*<sup>78</sup>

The British Government<sup>79</sup> joined forces with Monsanto, EFSA and the EU Commission on 23/09/2013 to fight civil society in the EU Court to defend the right to import Monsanto's transgenic soybean Intacta® which produces an insecticide and is resistant to glyphosate herbicides such as Roundup®. In fact in Brazil court actions are piling up against Monsanto<sup>80</sup> for collecting royalties on RR1 soybeans regarded as illegal and for conditioning the sale of new GM seed Intacta RR2 to the signing of a contract seen as abusive.

### **Confirmation of the action: answer to a Written Question in the House of Lords**

Monday 18 November 2013

Agriculture: Genetically Modified Crops

Question Asked by: **The Countess of Mar:**

*To ask Her Majesty's Government which member of the Government is responsible for the United Kingdom's approach in the case before the Court of Justice of the European Union regarding the decision of the European Food Safety Authority to allow genetically-modified soya beans to be marketed by Monsanto in the European Union; and whether any organisations are contributing to Her Majesty's Government's legal costs in that case.*<sup>81</sup>

**The Parliamentary Under-Secretary of State, Department of Health Earl Howe (Con):**

*The United Kingdom has a strong interest in the science-based system underpinning genetically modified product applications and so has applied to intervene in this case, which concerns the authorisation of genetically modified food and feed. Any intervention will represent the view of the Government as a whole and the only likely external legal costs will be those from instructing counsel and costs of attending any hearing should that prove necessary.*

### **Monsanto employed Total Intelligence Solutions to protect the Corporation's name<sup>82</sup>**

Spooky Business: Corporate Espionage Against Nonprofit Organizations Published on 20/11/2013. Page 33 gives information about the biotech giant, Monsanto:

The following information came from Jeremy Scahill reported in the *Nation* magazine that the security firm "Blackwater, through Total Intelligence, sought to become the 'intel arm' of Monsanto, offering to provide operatives to infiltrate activist groups organizing against the multinational biotech firm."<sup>83</sup> In recent years, Blackwater has twice been re-named: first as XE Services and again as Academi.<sup>84</sup> According to documents he obtained, Scahill reported in the *Nation* that: Through Total Intelligence and the Terrorism Research Center, Blackwater also did business with a range of multinational corporations. According to internal Total

<sup>78</sup> <http://www.gmeducation.org/government-and-corporations/p213501-uk-citizens-continue-to-reject-gmo-food-and-even-farmers-don-t-want-to-eat-it.html>

<sup>79</sup> <http://www.testbiotech.de/en/node/898>

<sup>80</sup> [http://sustainablepulse.com/2013/12/09/monsanto-faces-usd-1-billion-brazilian-farmer-lawsuit/#.UqlqP\\_RdU64](http://sustainablepulse.com/2013/12/09/monsanto-faces-usd-1-billion-brazilian-farmer-lawsuit/#.UqlqP_RdU64)

<sup>81</sup> [http://www.publications.parliament.uk/pa/ld201314/ldhansrd/text/131118w0001.htm#wst\\_0](http://www.publications.parliament.uk/pa/ld201314/ldhansrd/text/131118w0001.htm#wst_0)

<sup>82</sup> <http://www.corporatepolicy.org/spookybusiness.pdf>

<sup>83</sup> Jeremy Scahill, "Blackwater's Black Ops." *The Nation*, September 15, 2010.

<sup>84</sup> Academi has received \$2.1 billion in federal contracts, including \$1.5 billion with the State Department and \$607 million with the Defense Department, according to [USASpending.gov](http://USASpending.gov) (accessed October 28, 2013).

Intelligence communications, biotech giant Monsanto—the world's largest supplier of genetically modified seeds—hired the firm in 2008–09. The relationship between the two companies appears to have been solidified in January 2008 when Total Intelligence chair Cofer Black traveled to Zurich to meet with Kevin Wilson, Monsanto's security manager for global issues. After the meeting in Zurich, Black sent an e-mail to other Blackwater executives, including to [Blackwater owner and founder Erik] Prince and [coordinator of Blackwater's CIA business Enrique 'Ric'] Prado at their Blackwater e-mail addresses. Black wrote that Wilson "*understands that we can span collection from internet, to reach out, to boots on the ground on legit basis protecting the Monsanto [brand] name.... Ahead of the curve info and insight/heads up is what he is looking for.*" Black added that Total Intelligence "*would develop into acting as intel arm of Monsanto.*" Black also noted that Monsanto was concerned about animal rights activists and that they discussed how Blackwater "*could have our person(s) actually join [activist] group(s) legally.*" Black wrote that initial payments to Total Intelligence would be paid out of Monsanto's "generous protection budget" but would eventually become a line item in the company's annual budget. He estimated the potential payments to Total Intelligence at between \$100,000 and \$500,000. According to documents, Monsanto paid Total Intelligence \$127,000 in 2008 and \$105,000 in 2009."

The techniques used in corporate espionage against non-profits are outlined on page 47.

*"Computer hacking. There are many different techniques available to corporate spies who wish to hack a computer or a computer network. Some of the more obvious ones include vulnerability scanning (checking computers and networks for known security flaws), persistent software scanning implants and creation of custom malware, password cracking, phishing (obtaining passwords by posing as a trustworthy entity), Trojan horses (establishing a back door into a computer or network that can be exploited later and key loggers (recording of all keystrokes on a computer for later retrieval)."*

Further discussion about the Report by the Center for Corporate Policy Spooky Business by Dr Nafeez Ahmed (Executive Director of the Institute for Policy Research and Development)

The War on Democracy: How corporations and spy agencies use 'security' to defend profiteering and crush activism.<sup>85</sup>

Did they hack my email on 13<sup>th</sup> November 2013 to steal my email to Dirk Detken, Chief Attorney to EFSA to warn him about glyphosate toxicity in humans causing birth defects and cancers?

### **Transparency.org and revolving doors in the UK Government<sup>86</sup>**

The organisation Transparency grades countries in terms of perception of corruption. Denmark scores as the most transparent; the UK is no 14 and the US no 18. With regard to the UK: "*Stronger regulations for the 'revolving door' between government and businesses are needed. Furthermore, a mandatory register of lobbyists in legislation would bring about transparency.*" ... "*Given the links between foreign and domestic corruption, the anti-corruption agenda can be more effective if the Anti-Corruption Champion extends its authority to cover corruption within the UK.*"<sup>87</sup>

In 1997 Dr Peter Campbell went straight from being the Head of Ecotoxicology Branch at the Pesticides Safety Directorate in York into the post of Head of Ecological Sciences at

<sup>85</sup> <http://www.theguardian.com/environment/earth-insight/2013/nov/28/war-on-democracy-corporations-spy-profit-activism>

<sup>86</sup> <http://www.transparency.org/country#GBR>

<sup>87</sup> This is typical of the UK Government. On 31<sup>st</sup> October 2010, a newspaper headline: UK sets up the world's largest Marine Reserve. Where? Not in the UK but in the Chagos Islands in the Indian Ocean.



Syngenta.<sup>88</sup> In 2009 Syngenta and BBSRC gave £1 million to fund Warwick University and Rothamsted Research “to help to improve honeybee health.”<sup>89</sup> (Rothamsted had lost funding for its Bee Unit in 2006). Syngenta funded scientific assistants at Exeter University in 2012. Syngenta pioneered Operation Bumblebee in the UK and in 2010 announced expansion of programmes across Europe; up to €1 million over 5 years.<sup>90</sup> Programmes included: “*What Operation Bumblebee can do for your golf course?*” (? Perhaps reduce pesticide use). Syngenta had representatives on the Advisory Committee on Pesticides (ACP), the Committee on Toxicity of Chemicals in Foods, Consumer Products and the Environment (CoT),<sup>91</sup> on the Panel to choose the Pollinator Initiative Projects and on the Government’s Foresight Future of Farming Report.<sup>92</sup> Syngenta’s parent company AstraZeneca had two representatives on CoT<sup>93</sup>.

Defra’s Pesticides Forum Annual Report 2011 concluded: “*The work of the UK Pesticides Forum in 2011 confirms that the use of pesticides is **not** adversely impacting on the health of UK citizens or the environment. This is testimony to the effectiveness of both statutory and voluntary controls.*”

Dr Helen Thompson Chief Bee Scientist at Fera had received a Commission from Syngenta: The paper rejected the part neonicotinoids had to play in bee declines.

She acted as a Syngenta ‘watchdog’ on the Editorial Board of Ecotoxicology (that is until recently). She hadn’t declared her conflict of interests to the Editor-in-Chief.<sup>94</sup>

An assessment of key evidence about Neonicotinoids and bees March 2013<sup>95</sup>

The UK voted in the EU, against the EU ban on neonicotinoids because it was waiting for ‘new research on bumblebees to be completed by Fera’.

A secret letter from Defra Minister Owen Paterson to Syngenta (April 2013) was released to the *Observer* under freedom of information rules. He told the chemicals company Syngenta that he was ‘extremely disappointed’ by the European Commission’s proposed ban. He said that ‘the UK has been very active’ in opposing it and ‘our efforts will continue and intensify in the coming days.’<sup>96</sup>

Effects of neonicotinoid seed treatments on bumble bee colonies under field conditions was published by Dr Helen Thompson *et al.* Fera, York.<sup>97</sup>

On June 4 2013, EFSA rejected the study by Thompson *et al.* 2013 as weak. It said it “does not change the conclusions of the risk assessment” of January 2013.<sup>98</sup>

Dr Helen Thompson, presumably stung by EFSA’s several criticisms of the bumblebee study, joined Syngenta in September 2013 (was it to be full time rather than part-time?)<sup>99</sup>

<sup>88</sup> <http://uk.linkedin.com/pub/peter-campbell/4/283/6ba>

<sup>89</sup> <http://www.bbsrc.ac.uk/news/archive/2009/091001-pr-1million-award-honeybee-decline.aspx>

<sup>90</sup> <http://www.bbsrc.ac.uk/news/archive/2009/091001-pr-1million-award-honeybee-decline.aspx>

<sup>91</sup> That was in November 2011; now COT has a member from AstraZeneca and a former Vice-President of SmithKline.

<sup>92</sup> <http://www.bis.gov.uk/assets/foresight/docs/food-and-farming/11-546-future-of-food-and-farming-report.pdf>

<sup>93</sup> Only one representative in November 2013

<sup>94</sup> Personal experience

<sup>95</sup> <http://www.defra.gov.uk/publications/files/pb13937-neonicotinoid-bees-20130326.pdf>

<sup>96</sup> <http://www.guardian.co.uk/environment/interactive/2013/apr/29/environment-secretary-letter-syngenta-insecticide-ban>.

<sup>97</sup>

[http://www.fera.defra.gov.uk/scienceResearch/scienceCapabilities/chemicalsEnvironment/documents/report\\_PS2371Mar13.pdf](http://www.fera.defra.gov.uk/scienceResearch/scienceCapabilities/chemicalsEnvironment/documents/report_PS2371Mar13.pdf)

<sup>98</sup> <http://www.efsa.europa.eu/en/efsajournal/pub/3242.htm>

<sup>99</sup> <http://www.theguardian.com/environment/2013/jul/26/government-bee-scientist-pesticide-firm>



**The Royal Commission on Environmental Pollution** was abolished on 1 April 2011, as part of the Coalition Government's spending cuts. It had been created under Royal Warrant in 1970 to advise the Queen, Government, Parliament and the public on environmental issues.

**The Advisory Committee on Pesticides to be abolished:** A statement dated 8<sup>th</sup> March 2012 appeared on the ACP website about a Consultation on its fate.<sup>100</sup> *The option currently proposed is to abolish the Committee as a statutory Non-Departmental Public Body (NDPB) and to reconstitute it as a new expert scientific committee.*

### **Nature in the hands of the pesticides industry**

*Nature* has a long history of failing to report conflicts of interest. I wrote to Dr Philip Campbell, the Editor-in-Chief of *Nature* on three occasions<sup>101</sup> to point out where he had given preferential treatment to Syngenta and Syngenta-funded scientists without declaring their conflicts of interest.

### **Nature's leaps to the defence of Syngenta and Bayer**

On 16/01/2013, EFSA announced they had reviewed available evidence and concluded that neonicotinoids insecticides, imidacloprid, thiamethoxam and clothianidin, should not be used on crops attractive to bees. EFSA had discovered large data gaps in industry risk assessments. On the same day, this piece appeared:<sup>102</sup> Breaking News; Row over reports on bee-bothering insecticides; Syngenta brands risk assessment as hurried and inadequate by *Nature* Editor Daniel Cressey. The comments by senior staff in Syngenta (Basel) and Bayer CropScience (Germany) appear to have been issued on the same day. "John Atkin Chief Operating officer at Syngenta in Basel said: This report is unworthy of EFSA and its scientists." According to the Editor Daniel Cressey, *Nature* had asked EFSA to respond to this statement.

### **GMOs: A new breed**

A subsequent article in *Nature* by the same journalist was entitled: GMOs: A new breed?<sup>103</sup> It was so outrageously inaccurate and biased that it prompted me to write to him directly. 'Daniel, your description of the current GMOs that have "allowed farmers to increase yields and spray less pesticides" is industry propaganda. Tell that to a US farmer and he will laugh; they have been trapped in a pesticide treadmill by promises that were never fulfilled. You cannot have read a single independent journal. In fact, you only have four references. The rest are quotations from Monsanto and GMO scientists; tempting the public with promises of benefits to come. "Scientists are working on GM plants that will need less pesticides" "Field trials are currently under way" says Maurice Moloney, (a Monsanto collaborator imported from Canada in April 2010) and now Director and Chief Executive of Rothamsted Research. "In the greenhouse it has been very successful" What plant is he talking about?

### **European Union Environment Council voted "Yes" on June 12 2014 on a controversial proposal that could see GM crops planted in UK fields as early as next year**

An article from GeneWatch UK revealed that Owen Paterson, UK Environment Minister and the GM industry have been working to open England up to RoundUp® Ready GM crops.<sup>104</sup> "The UK Government has colluded with commercial lobbyists to fast track RoundUp® Ready

<sup>100</sup> <https://www.gov.uk/government/consultations/the-future-of-the-advisory-committee-on-pesticides>

<sup>101</sup> 07/01/2013, 01/02/2013 and 11/06/2013.

<sup>102</sup> doi:1038/nature.2013.12234

<sup>103</sup> <http://www.nature.com/news/transgenics-a-new-breed-1.12887> 2 May 2013 497: 27-29.

<sup>104</sup> <http://www.genewatch.org/article.shtml?als%5bcid%5d=574133&als%5bitemid%5d=574596>

*GM maize into England, despite the expected harm to British wildlife such as birds and butterflies caused by blanket spraying of these crops with weed-killer."* said Dr Helen Wallace, Director of GeneWatch UK.

*"If some farmers in England press ahead with GM cultivation as a result of this proposal ,then conventional and organic farmers across the country will face the unnecessary risk of loss of markets due to contamination with GM".* Documents released to GeneWatch UK, as the result of Freedom of Information requests, have highlighted how closely the UK Government is working with the GM industry<sup>105</sup> and the extent to which commercial lobbying has influenced the European proposals.<sup>106</sup>

*In the UK, there are no national measures for co-existence of GM and non-GM crops and for liability for the costs of contamination incidents, which can cost conventional and organic farmers many millions of pounds in lost markets for their products. (The British Government has relied on Europe for its 'science'.<sup>107</sup>) "This is a real step forward in unblocking the dysfunctional EU process for approving GM crops, which is currently letting down our farmers and stopping scientific development," said Owen Paterson, UK Secretary of State for the Environment.<sup>108</sup> RT's Berlin correspondent, Peter Oliver, says that the public in environmentally conscious Germany is giving genetically modified crops a firm "no," although GM foods can be legally sold in Germany.*

*"In countries like Germany we've seen a massive outcry against genetically modified foods and people preferring to shop at organic stores. The reasons they've been giving for this are several – most notably health. People are saying there's not enough research, or the research hasn't even been done,"* said Oliver.

### **What is the Oxford Martin Commission for Future Generations?**

*"A diverse group of highly respected global leaders has called for a radical shake-up in politics and business to deliver progress on climate change, reduce economic inequality, improve corporate practices and address the chronic burden of disease."*

The Commission was founded in 2005. In that case why has the Global Burden of Disease greatly increased in the UK and the US between 1990 and 2010?<sup>109</sup>

In the UK: *"The performance of the UK in terms of premature mortality is persistently and significantly below the mean of EU15+ and requires additional concerted action... premature mortality from several major causes such as cardiovascular disease and cancers...In terms of premature mortality worsening ranks are most notable for men and women aged 20-54 years. Increases in Alzheimer's disease, breast cancer, oesophageal cancer, congenital anomalies "and a growing burden of disability, particularly from mental disorders" are all acknowledged.*

The Chairman of the Oxford Martin Commission is Pascal Lamy, Former Director-General of the World Trade Organization. It is of interest to note that in a case brought by the US, Canada, and Argentina in 2006, the World Trade Organization (WTO) ruled that the European moratorium on GM crops was illegal.

Sir John Beddington is Senior Adviser and Professor of Natural Resources Management, and Lord Patten, Chairman of the BBC Trust, is a Commissioner. It is not surprising that Sir John

<sup>105</sup> [http://www.genewatch.org/article.shtml?als\[cid\]=492860&als\[itemid\]=574495](http://www.genewatch.org/article.shtml?als[cid]=492860&als[itemid]=574495)

<sup>106</sup> <http://corporateeurope.org/food-and-agriculture/2014/05/biotech-lobbys-fingerprints-over-new-eu-proposal-allow-national-gmo>

<sup>107</sup> <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmenvaud/567/56704.htm>

<sup>108</sup> <http://rt.com/news/165608-gm-crops-eu-deal/>

<sup>109</sup> <http://www.ncbi.nlm.nih.gov/pubmed/23668584> UK health performance: findings of the Global Burden of Disease Study 2010

was able to persuade the BBC to present an edition of the programme *Countryfile* (with Sir John in a starring rôle) about the benefits of GM crops. There were many complaints from viewers about bias, which the BBC dismissed. How can the only public-funded Corporation completely deceive the public by broadcasting so many Television and Radio Programmes that are unbalanced and biased in favour of the pesticides industry?

### **Is the former Director General of the WTO there as Chairman to help the signing of TTIP?**

The purpose of the Transatlantic Trade and Investment Partnership apparently is to remove the regulatory differences between the US and European nations. In the Guardian on 05/11/2013 George Monbiot wrote This US trade deal is a full frontal assault on democracy. To quote from his article:<sup>110</sup> *“the remarkable ability it would grant big business to sue the living daylights out of governments which try to defend their citizens. It would allow a secretive panel of corporate lawyers to overrule the will of parliament and destroy our legal protections.”* In a second article:<sup>111</sup> Chickens in chlorine? That’s what free trade’s about. *“Last month, while trying to defend the treaty, the British Minister Kenneth Clarke said something revealing: Investor protection is a standard part of free-trade agreements - it was designed to support businesses investing in countries where the rule of law is unpredictable, to say the least. George Monbiot asks: “So what is it doing in an EU-US deal? Why are we using measures designed to protect corporate interests in failed states in countries with a functioning judicial system?”* There is widespread opposition in France to TTIP (TAFTA)<sup>112</sup> which is perceived as being advantageous to Corporations, but against the interest of the public. So why is the British Government supporting it?

### **Conflicts of interest of Anne Glover CSO to the European Parliament**

Professor Glover, in an interview with EurActiv<sup>113</sup> said: *“There is no substantiated case of any adverse impact on human health, animal health or environmental health, so that’s pretty robust evidence, and I would be confident in saying that there is no more risk in eating GMO food than eating conventionally farmed food.”* She said the precautionary principle no longer applies as a result. *“The evidence with which I work is independent; the evidence with which I work does not change according to political philosophy. And that should give people a lot of confidence.”* She is not independent. According to Glover's declaration, as reported by Damerval,<sup>114</sup> *“Professor Glover is a shareholder in a biotech company and set up the firm Remedios, which was named Scotland’s “Best New Biotechnology Company” for Biotech Scotland by its industry peers.”*<sup>115</sup> *She will be a leading speaker at a conference in Africa to persuade them to grow GM crops. She sits on the board of Science Business, alongside representatives of Microsoft, Sanofi and BP; members include biotechnology companies.”* Glover said that discomfort around the subject of GM crops in the 1980s and 1990s was *“a generation ago, we’ve moved on and the challenges are completely different.”* Corinne Lepage MEP for France (and former French Minister of the Environment) says Anne Glover

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<sup>110</sup> <http://www.theguardian.com/commentisfree/2013/nov/04/us-trade-deal-full-frontal-assault-on-democracy>

<sup>111</sup> <http://www.theguardian.com/commentisfree/2013/dec/02/transatlantic-free-trade-deal-regulation-by-lawyers-eu-us>

<sup>112</sup> <http://rt.com/news/172012-france-celebrities-protest-tafta/>

<sup>113</sup> <http://www.euractiv.com/innovation-enterprise/commission-science-supremo-endor-news-514072>

<sup>114</sup> Francois Damerval is Chief of Staff to Corinne Lepage, the French MEP.

<sup>115</sup> <http://foodvitalpublicservice.wordpress.com/2014/02/13/the-biotech-industry-retreats-from-europe-but-is-courting-africa/>

is wrong.<sup>116</sup> *“However, regarding the environmental impact of GMOs, the evidence is overwhelming and completely concrete. Not only is the dissemination of GMOs to non-GM plants proven, but the damage caused by regrowth elsewhere, which requires the use of ever more toxic pesticides, has already become a reality.”* She should also have added that in Latin America, where GMO crops have been grown since 1996, there has been an increased incidence of birth defects, miscarriages, infertility, cancers, DNA damage, neurological developmental problems in children and allergies.<sup>117</sup> In 2013 birth defects are still occurring in rural Argentina.<sup>118</sup>

Corinne Lepage goes on to say: *“Glover has as such taken on a heavy amount of personal responsibility, going so far as to say the precautionary principle is no longer applicable. If in the coming years, evidence on the toxicity of GMOs comes to light, European citizens would be entitled to ask her for an explanation.”*

### **European Commission’s failure to identify Endocrine Disrupting Chemicals (EDC)**

An assessment of the State of Science of Endocrine Disruptors was prepared for the United Nations Environment Program and the World Health Organization by a group of approximately 50 expert scientists.<sup>119</sup>

The authors outlined the current evidence of: 1) a high incidence, and increasing trends, of many endocrine-related disorders in humans; 2) observations of endocrine-related effects in wildlife populations; 3) identification of chemicals with endocrine disrupting properties linked to disease outcomes in laboratory studies.

*“Endocrine-related disorders in humans are manifest by:*

- *Increases in low semen quality in young men (up to 40%)*
- *Incidence of genital malformations has increased over time*
- *Adverse pregnancy outcomes and birth defects has increased in many countries*
- *Neurobehavioural disorders related to thyroid dysfunction has increased*
- *Endocrine-related cancers (breast, endometrial, ovary, prostate, testicular and thyroid cancers) have been increasing over the past 40 -50 years*
- *Earlier onset of breast development in young girls which leads to breast cancer*
- *The prevalence of obesity and type 2 diabetes is increasing. The WHO estimates that 1.5 billion adults worldwide are overweight or obese and that the number with type 2 diabetes increased from 153 million to 347 million between 1980 and 2008.”*

The conclusion was: *“It is essential to evaluate associations between EDC exposures and health outcomes by further developing methods for which proof of concept is currently under development.”* An Editorial in the *Lancet*<sup>120</sup> concluded: *“there is currently no widely agreed system for assessing the strength of associations between exposure to chemicals (including EDCs) and adverse health outcomes.”*

Glyphosate was not even considered as a candidate for an Endocrine Disrupting Chemical; why was that? In the Report overwhelming evidence was produced to show that atrazine (Syngenta) was an EDC; so why wasn’t it named as such? The reason is that atrazine is still used extensively in many countries, including the US and Australia and Syngenta has

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<sup>116</sup> <http://www.euractiv.com/cap/gmos-anne-glover-wrong-analysis-514185>

<sup>117</sup> [http://www.keine-gentechnik.de/fileadmin/files/Infodienst/Dokumente/2012\\_08\\_27\\_Lopez\\_et\\_al\\_Pesticides\\_South\\_America\\_Study.pdf](http://www.keine-gentechnik.de/fileadmin/files/Infodienst/Dokumente/2012_08_27_Lopez_et_al_Pesticides_South_America_Study.pdf)

<sup>118</sup> <http://www.nationofchange.org/argentina-s-bad-seeds-1363532747>

<sup>119</sup> [http://unep.org/pdf/9789241505031\\_eng.pdf](http://unep.org/pdf/9789241505031_eng.pdf)

<sup>120</sup> [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(13\)60564-4/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(13)60564-4/fulltext)

enormous global power. However, atrazine was banned in Europe 10 years ago, so it is unlikely to have had a major contribution to early breast development in girls. In 2014, girls in Europe age 13 have advanced physical and sexual development equivalent to that of a 16-18-year-old 30 years ago.

**A letter had been sent to Prof Anne Glover Chief Scientific Officer to the European Commission to protest about the Draft Regulation on endocrine active chemicals 18/06/2013<sup>121</sup>**

Seventy three individuals writing under the umbrella of the Royal Society of Chemistry complained that the European Commission was ignoring scientific principles in the setting of a regulatory framework for endocrine disrupting chemicals. Several had conflicts of interest.

**Sweden decides to sue the EU for delay on identifying hormone disrupting chemicals**

On May 22 2014, Sweden said it would sue the European Commission over a delay in identifying harmful chemicals in everyday products, which it blamed on chemical industry lobbying.<sup>122</sup>

*“This delay is due to the European chemical lobby, which put pressure again on different Commissioners,”* Swedish Environment Minister Lena Ek told AFP.

The Commission was due to set criteria by December 2013 to identify endocrine disrupting chemicals (EDCs) in thousands of products — including disinfectants, pesticides and toiletries — which have been linked to cancers, birth defects and development disorders in children. *“Hormone disrupters are becoming a huge problem,”* said Ek, explaining that Sweden and Denmark had written to the Commission to demand action but to little avail.

*“In some places in Sweden we see double sexed fish. We have scientific reports on how this affects fertility of young boys and girls, and other serious effects.”*

**New attack on EU policy regarding endocrine disruption: Health DG SANCO prepares an escape route for pesticides<sup>123</sup> 20/05/2014**

*“Commission health service DG SANCO is on its way to develop an escape route for endocrine disrupting pesticides that will be banned in future. This is done behind closed doors with EU member states and Food Authority EFSA. Sweden fiercely protested against this initiative because they feel the pesticide Regulation is misused and doesn’t allow for a general derogation. Food Authority EFSA is also active in the SANCO working group, lobbying to revise the legislation on endocrines back to traditional risk assessment and encouraging SANCO to use an escape route.”*

## **Effects of pesticides on human health**

**Epidemiological evidence of deterioration of health in the UK**

**[Overweight and obesity in mid-life: Evidence from the 1970 British Cohort Study](#)<sup>124</sup>**

The Centre for Longitudinal Studies based at the Institute of Education University of London published their latest report on 9 November 2013.

Their key findings of the cohort at age 42 were that:

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<sup>121</sup> <http://www.rsc.org/suppdata/tx/c3/c3tx90013d/c3tx90013d.pdf>

<sup>122</sup> <http://www.capitalfm.co.ke/business/2014/05/sweden-to-sue-eu-for-delay-on-hormone-disrupting-chemicals/>

<sup>123</sup> <http://www.pan-europe.info/News/PR/140520.html>

<sup>124</sup> [Overweight and obesity in mid-life: Evidence from the 1970 British Cohort Study at age 42](#)



- The generation born in 1970 is considerably more likely to be overweight or obese than those born 12 years earlier were at the same age.
- Men born in 1970 are far more likely to be overweight than women.

Bearing in mind our previous reports about glyphosate being toxic in extremely low doses, we suggest that humans are being exposed regularly to small amounts of glyphosate residues in staple foods such as bread, cereals, potatoes and lentils (see Defra Expert Committee on Pesticide Residues in Food.<sup>125</sup>) The use of glyphosate for desiccation on both barley and wheat was accepted by the brewing and distilling industries in 2007<sup>126</sup> therefore it is probable that men are more likely to be overweight because of the consumption of beer or whisky with glyphosate residues. Many foods imported from the US have GM ingredients and will contain glyphosate (or other herbicide residues). These include products which 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. The fact that glyphosate is in the food chain is confirmed by two studies in which glyphosate residues were found in the urine of urban populations in Germany<sup>127</sup> in 2012 and the EU as a whole in 2013.<sup>128</sup> A third study by Prof Bøhn and colleagues from Norway shows glyphosate and AMPA residues in samples of GM Roundup® Ready Soy from Iowa.<sup>129</sup> The organisation Moms Across America and Sustainable Pulse have revealed the presence of glyphosate in breast milk, urine and drinking water, despite Monsanto's claim that it was excreted in the urine and accumulation did not occur.<sup>130</sup>

### **Global burden of disease study 2010 shows declines in the health of the UK and US**

Between 1990 and 2010, Britain and the US have slipped down the scale of health compared with other wealthy nations and the patterns of disease are remarkably similar.

In the US: "*However, morbidity and chronic disability now account for nearly half of the US health burden, and improvements in population health in the United States have not kept pace with advances in population health in other wealthy nations.*"<sup>131</sup> In the UK: "*The performance of the UK in terms of premature mortality is persistently and significantly below the mean of EU15+ and requires additional concerted action... premature mortality from several major causes such as cardiovascular disease and cancers... In terms of premature mortality worsening ranks are most notable for men and women aged 20-54 years. Increases in Alzheimer's disease, breast cancer, oesophageal cancer, congenital anomalies "and a growing burden of disability, particularly from mental disorders" are all acknowledged.*"<sup>132</sup>

### **Substantial increase in neurological deaths 1979-2010**

Ten major developed Western countries and 10 smaller Western countries were studied.<sup>133</sup> There was a major reduction in general mortality in all 20 countries, but total neurological

<sup>125</sup> <http://www.pesticides.gov.uk/guidance/industries/pesticides/advisory-groups/PRiF>

<sup>126</sup> 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>

<sup>127</sup> <http://www.ithaka-journal.net/herbizide-im-urin?lang=e>

<sup>128</sup> <http://www.foeeurope.org/weed-killer-glyphosate-found-human-urine-across-Europe-130613>

<sup>129</sup> <http://www.sciencedirect.com/science/article/pii/S0308814613019201> Compositional differences in soybeans on the market: glyphosate accumulates in Roundup Ready GM soybeans.

<sup>130</sup> [http://www.momsacrossamerica.com/glyphosate\\_testing\\_results](http://www.momsacrossamerica.com/glyphosate_testing_results)

<sup>131</sup> <http://www.ncbi.nlm.nih.gov/pubmed/23842577>.

<sup>132</sup> <http://www.ncbi.nlm.nih.gov/pubmed/23668584> UK health performance: findings of the Global Burden of Disease Study 2010

<sup>133</sup> <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)

deaths rose substantially between 1980 and 2010 in both sexes in 16 out of 20 western countries. The mortality was significantly higher in females. A direct quote from the paper: *“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.”*

### **Link between mid-life obesity and dementia: a twin study<sup>134</sup>**

Both overweight and obesity at midlife independently increase the risk of dementia, Alzheimer’s disease and vascular dementia. Genetic and early-life environmental factors may contribute to the midlife high adiposity-dementia association.

### **The effects of chemicals on the development of the brain**

ONLY ONE CHANCE: How Environmental Pollution Impairs Brain Development - and How to Protect the Brains of the Next Generation by Professor Philippe Grandjean: Oxford University Press.

*“This book is a huge gift to humankind from an eminent scientist. Grandjean tells the truth about how we have been ruining the brain power of each new generation and asks if there are still enough intelligent people in the world today to reverse the problem. I cannot rid myself of the idea that too many brains have been drained and society is beyond the point of no return. We must learn from the follies and scandals that Grandjean reveals and stop the chemical brain drain before it is too late.”*

THEO COLBORN, PHD, President, TEDX (the Endocrine Disruptor Exchange)

### **Chemical brain drain: insidious and pervasive**

*“Today, one out of every six children suffers from some form of neurodevelopmental abnormality. The causes are mostly unknown. Some environmental chemicals are known to cause brain damage and many are suspected of it, but few have been tested for such effects. The brain’s development is uniquely sensitive to toxic chemicals and even small deficits may negatively impact our academic achievements, economic success, risk of delinquency, and quality of life. Chemicals such as mercury, polychlorinated biphenyls (PCBs) arsenic and certain pesticides pose an insidious threat to the next generation’s brains. When chemicals in the environment affect development of the child’s brain, he or she is at risk for mental retardation, cerebral palsy, autism, ADHD, and a range of learning disabilities and other deficits that will remain for a lifetime.*

*The chemical brain drain can be halted to protect the next generation’s brain power. First, we need to control all of the 200 industrial chemicals that have already been proven to affect brain functions in adults, as their effects on the developing brain are likely even worse. We must also demand routine testing for brain toxicity, stricter regulation of emissions of brain-toxic chemicals, and required disclosure on the part of industries who unleash these hazardous chemicals into products and the environment. Decisions can still be made to protect the brains of future generations – and some decisions appear to be seriously overdue. This site aims at furthering information on chemical risks to brain development and ways to protect the next generation against chemical brain drain.”<sup>135</sup>*

### **Excerpt from 2012 US Report on Children’s Health: A Generation in Jeopardy<sup>136</sup>**

Breast Milk *Studies from around the world have documented pesticides in human breast milk, though experts agree it remains the best source of nutrition for infants. Baby foods and fruit*

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<sup>134</sup> Midlife overweight and obesity increase late-life dementia risk: a population-based twin study. Xu, W.L. et al. *Neurology* <http://www.ncbi.nlm.nih.gov/pubmed/21536637>

<sup>135</sup> <http://braindrain.dk/> [www.chemicalbraindrain.info](http://www.chemicalbraindrain.info)

<sup>136</sup> <http://www.panna.org/publication/generation-in-jeopardy>

*juices consumed by infants and toddlers tend to be highly processed, which can sometimes concentrate pesticide residues existing on the fresh produce. U.S. researchers measuring pesticides in baby foods found low-level residues of many pesticides, including eight known to be toxic to the nervous system, five that disrupt hormones and eight that are potential carcinogens*

*The chemicals found in a mother's milk represent a combination of long-lasting pesticides and industrial pollutants that have accumulated over a lifetime (many of which the body tends to store in fatty tissues), and shorter-lived chemicals that a woman is exposed to during pregnancy and breast feeding. This chemical burden is transferred to nursing infants just as their bodies are most vulnerable to chemical harms. The good news is that analysis of decades of banked breast milk in Sweden shows that bans on specific chemicals can result in rapid and dramatic decreases in the levels of some of those compounds in human milk.*

### **Violent Behavior: A Solution in Plain Sight**

This paper by Sylvia Onusic,<sup>137</sup> PhD, CNS, LDN, seeks reasons for the increase in violent behaviour in America, especially among teenagers. She identifies malnutrition, vitamin and micronutrient deficiency as potent causes of aberrant behaviour, crime and the spectrum of autistic diseases. Some children have been corrected by a proper diet free of junk food. This could well be applied to the UK, where the incidence of neurobehavioral disorders is becoming increasingly common.

### **Increases in depression and anti-depressant medication**

Researchers from the Nuffield Trust and the Health Foundation identified a long-term trend of increasing prescriptions of antidepressants, rising from 15 million items in 1998 to 40 million items in 2012.<sup>138</sup> This could be explained by the effects of glyphosate residues on serotonin metabolism.<sup>139</sup>

### **Industry says that it is only because we are living longer that we are getting cancers,**

But if you look at obituaries in the British Medical Journal and those in the mainstream press there are now many younger people (and young children) dying very rapidly from aggressive disease. A number of people are now failing to reach their “*three score years and ten.*” This is reflected in the latest Global Burden of Disease study. Unfortunately industry is working **within** Government. The first evidence we have is from 1997, when under the ‘revolving doors’ system (described in the US with Monsanto) Dr Peter Campbell moved from the Pesticide Safety Directorate (now the CRD) straight into a job with Syngenta. From that point onwards Syngenta was in a privileged position.

### **Devastating declines in pollinators and systemic neonicotinoid insecticides: British Government ignores evidence from the Italian figures and commissions a new study from Syngenta**

The European Commission recently announced the results of a honey bee study<sup>140</sup> on colony mortality. Italy, which banned neonicotinoids on maize in 2008, had a mortality of 5.3% in winter 2012-2013, whereas the winter loss in the UK was 28.8%. In 2008, the Italian Minister of Health and the Minister of Agriculture had decided to apply the precautionary principle and suspend on an annual basis the insecticides on maize-treated seeds (clothianidin,

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<sup>137</sup> <http://www.westonaprice.org/environmental-toxins/violent-behavior-a-solution-in-plain-sight/pdf>

<sup>138</sup> <http://www.theguardian.com/society/2014/may/28/-sp-antidepressant-use-soared-during-recession-uk-study>

<sup>139</sup> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3945755/>

<sup>140</sup> [http://ec.europa.eu/food/animals/live\\_animals/bees/study\\_on\\_mortality/index\\_en.htm](http://ec.europa.eu/food/animals/live_animals/bees/study_on_mortality/index_en.htm)

thiamethoxam, imidacloprid and fipronil). According to a letter sent by Dr Porrini and Prof Maini to the EU Commission Enquiry into Bee Health, winter bee hive losses declined from 37.5% in 2007-2008 to around 15% in 2010-2011. In 2012-13 it was 5.3%. No major ground-based pest attacks were observed, even without using treated seeds. As a result, in 2011 in a court in Turin, Prosecutor Guariniello, who had conducted an investigation into the memory of bees, sent a warning to the managing directors of Bayer CropScience in Milan and Syngenta Crop Protection in Italy. They could be charged with the spreading of diseases to animals (or plants) which pose a danger to the national economy. In contrast, the UK Agency Defra has invited Syngenta to conduct a further pollinator study in 2014. How could that be? Because the government is working with the pesticides industry to try to bring GM crops into Britain.<sup>141</sup>

### **The ‘natural science base’ of neonicotinoids from the Oxford Martin Commission**

Defra wants Syngenta to do a further pollinator study because the UK government is attempting to overturn the neonicotinoid ban. In the light of the evidence from Italy, this perverse action by Defra is being challenged by the Parliamentary Environmental Audit Committee. The EAC is taking evidence for another enquiry in June 2014.<sup>142</sup> On behalf of the Oxford Martin Commission, Professor Charles Godfray has just published a new paper in the Proceedings of the Royal Society: *“A restatement of the natural science base concerning neonicotinoid insecticides and insect pollinators.”*<sup>143</sup> What Godfray *et al.* described as “true field experiments in the sense that the treatments involve the normal use of neonicotinoids” which “found no effects of neonicotinoids”<sup>144</sup> were either done by Syngenta employees, or in the case of the Thompson paper on bumblebees,<sup>145</sup> was commissioned by Syngenta. Dr Thompson’s study was heavily criticised by EFSA as being flawed. Dr Thompson left the UK Food and Environment Research Agency in August 2013 and joined Syngenta as Principal Technical Expert in September 2013.

### **Where has scientific integrity in Universities gone?**

Prof Jeremy Ramsden, Editor-in-Chief of *The Journal of Biological Physics and Chemistry* laments the loss of distinction between University Research and Commissioned Research (either from industry or from Government Departments).<sup>146</sup> *“This renunciation of unimpeachable scientific integrity could not have come at a worse time for humanity. Our technical capabilities for manipulating nature have reached unprecedented heights.”*

### **Letter to the US Environmental Protection Agency about streamlining risk assessment**

On 12 May 2014 I wrote to the US EPA about the Office of Pesticides Programs (OPP) with regard to a meeting they held on Risk Assessment in 13/12/2010:

*“At the same time as one of Administrator Lisa Jackson’s Mission Statement was: ‘We have greater opportunity to protect human health and the environment than before’, on December 13<sup>th</sup> 2010 the OPP had a competition to see who could design a computer program to:*

<sup>141</sup> <http://www.dailymail.co.uk/news/article-2621058/Secret-emails-reveal-ministers-plotted-GM-lobbyists-Documents-two-worked-campaign-win-sceptical-consumers.html>

<sup>142</sup> <http://www.parliament.uk/business/committees/committees-a-z/commons-select/environmental-audit-committee/news/newinquiryinternationalpollinatorstrategy/>

<sup>143</sup> <http://rspb.royalsocietypublishing.org/content/281/1786/20140558.full.html>

<sup>144</sup> <http://www.plosone.org/article/authors/info%3Adoi%2F10.1371%2Fjournal.pone.0077193;jsessionid=26BAA0B63C90A7DADDB02FBA4A3A9179>

<sup>145</sup> <http://www.entomology.umn.edu/cues/pollinators/pdf-EU/2013DEFRA%20bumble%20bees.pdf>

<sup>146</sup> <http://www.colbas.org/ntp/opnAxs/N06RA12E.pdf>



*'Streamline the Risk Assessment Process'. Robert Schultz won with his e-Dossier Builder which was designed to make it easier for the registrants. The two main benefits were reduced costs to the EPA and quicker processing. In the 67 Power-point slides there was not a single mention of human health or the environment. Anyone that dares to speak out is ejected from the team and isolated. What about Adrian Gross? What happened to Joseph de Cant who wrote the Memo on Clothianidin in 2010?*

*Someone boasted that: "since 2002 no pesticide products had been suspended by the EPA." I hope that you will break that record by not re-registering glyphosate.*

*Did you know that Monsanto had four patents on glyphosate? The industry has been deceiving you all this time. If you read the two documents,<sup>147</sup> you will realise that we are being silently poisoned by a variety of chemicals: powerful biocides, such as neurotoxins, endocrine disruptors, fungicides, growth regulators etc. These are all agents that are meant to kill and they are present in our food. Wherever pesticides have been used, there are biological deserts. Pollinators in the US are facing extinction. Bats, bees, butterflies, amphibians and birds are being wiped out. Animals and trees are being affected by diseases as a result of immune suppression caused by chemicals.*

*Humans and animals are sick and the environment is even sicker."*

*I attached two documents; Glyphosate reassessment in Europe is fraudulent and We are what we eat; the poisoning of our food supply.*

### **Zen Honeycutt and Moms Across America and Autism in their children**

In the absence of a reply to my letter of 12/05/2014, on 15/06/2014 I wrote to Steven Bradbury,<sup>148</sup> Director, Office of Pesticides Programs, US EPA: *"I understand that your staff had a long meeting recently with Zen Honeycutt representing Moms Across America and two other organisations. They knew that autism in their children was linked to glyphosate use. They had commissioned a study that found that there was glyphosate in breast milk, urine and drinking water."<sup>149</sup> The Costs of Autism Spectrum Disorders in the United Kingdom and the United States was published in the Pediatric section of JAMA.<sup>150</sup> "The cost of supporting an individual with an ASD and intellectual disability during his or her lifespan as \$2.4 million in the United States and £1.5 million (US \$2.2 million) in the United Kingdom. The largest cost components for children were special education services and parental productivity loss."* I asked him whether EPA knew about the four patents held by Monsanto and supplied him with the patent references.

### **Reply from Anne Overstreet, Chief Communications Service Branch EPA 19/06/2014**

*"...In response to your question, Monsanto has not informed us of these claims that you make and to date, such claims (i.e. of the four patents held on glyphosate) have not been supported by rigorous scientific studies. The EPA has received the information you cite about glyphosate being found in samples of breast milk, urine and tap water. Although the information highlights detectable levels of glyphosate in our food supply, it does not provide enough information for the EPA to assess the quality of the data...The Agency always strives to base their decisions on sound science...If glyphosate is found to present risks to human health or the environment that cannot be mitigated by other measures, the agency has the authority to make a finding that the pesticide no longer meets the standard for registration under FIFRA. In that case, then the agency will move quickly to take appropriate regulatory*

<sup>147</sup> <https://independent.academia.edu/RosemaryMason> We are what we eat. The poisoning of our food supply and Glyphosate re-assessment in Europe is fraudulent.

<sup>148</sup> Steven Bradbury is no longer Director of OPP.

<sup>149</sup> [http://www.momsacrossamerica.com/glyphosate\\_testing\\_results](http://www.momsacrossamerica.com/glyphosate_testing_results)

<sup>150</sup> <http://archpedi.jamanetwork.com/article.aspx?articleid=1879723>



action. Any such action would have to be supported by the best available peer-reviewed science.”

### **The use of pesticides around the world has produced biological deserts**

Here is a description of a 600 acre farm in Ohio with GMO corn on which Craig Childs<sup>151</sup> spent a long weekend and found virtually nothing. *"I listened and heard nothing, no bird, no click of insect. There were no bees. The air, the ground, seemed vacant...It felt like another planet entirely," he said, a world denuded.*

Robert Krulwich's blog commented on Craig Child's description<sup>152</sup>: *"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. 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."* In the UK in 2012, on a warm August evening, in a garden surrounded by arable crops, no moths came to the candles.<sup>153</sup> There was not a single insect. Few people have noticed, or care much about their loss. But flying insects are the visible manifestation of a massive iceberg of trillions of invertebrates working away unseen in soil and water. The neonicotinoid insecticides attack the nervous system receptors of all invertebrates. These are the small things that run the world. Destroy these and you ultimately destroy life itself, at least as a planet fit for humans.

### **The systemic neonicotinoid insecticides; a disaster in the making**

On December 3<sup>rd</sup> 2010, we sent the CRD and Defra information (and later a pdf link) to Dr Henk Tennekes' book. Dr Tennekes, an independent Dutch toxicologist, first warned of the dangers of the systemic neonicotinoid insecticides to arthropods in a paper in *Toxicology*<sup>154</sup> and in his book: *The systemic neonicotinoid insecticides: A disaster in the making*. Dr Tennekes says that his book: *"... catalogues a tragedy of monumental proportions regarding the loss of invertebrates and subsequent losses of the insect-feeding (invertebrate-dependent) bird populations in all environments in the Netherlands. The disappearance can be related to agriculture in general, and to the neonicotinoid insecticide imidacloprid in particular, which is a major contaminant of Dutch surface water since 2004."* The relationship exists because of crucial (and catastrophic) disadvantages of the neonicotinoid insecticides: the damage to the central nervous system of insects is irreversible and cumulative. Tennekes showed that there is no safe level of exposure, and even minute quantities can have devastating effects in the long term. They leach into groundwater and contaminate surface water and persist in soil and water, chronically exposing aquatic and terrestrial organisms to these insecticides. *"So, what, in effect, is happening is that these insecticides are creating a toxic landscape, in which many beneficial organisms are killed off."* Tennekes and Sánchez-Bayo, in a more recent paper, demonstrated that chemicals that bind irreversibly to specific receptors

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<sup>151</sup> Craig Childs Apocalyptic Planet <http://www.houseofrain.com/bookdetail.cfm?id=1344621970977>

<sup>152</sup> <http://www.npr.org/blogs/krulwich/2012/11/29/166156242/cornstalks-everywhere-but-nothing-else-not-even-a-bee>

<sup>153</sup> Personal observation

<sup>154</sup> Tennekes HA. The significance of the Druckrey-Küpfmüller equation for risk assessment – The toxicity of neonicotinoid insecticides to arthropods is reinforced by exposure time. *Toxicology* 2010; 276(1):1-4. <http://www.ncbi.nlm.nih.gov/pubmed/20803795>

(neonicotinoids, genotoxic carcinogens and some metalloids) will produce toxic effects in a time-dependent manner, no matter how low the level of exposure.<sup>155</sup>

Imidacloprid was licensed for use in Europe in 1994 and in July 1994, beekeepers in France noticed something unexpected. Over the course of a few days, just after the sunflowers had bloomed, a substantial number of their hives would collapse, as the worker bees flew off and never returned, leaving the queen and immature workers to die. The French beekeepers soon believed they knew the reason; a brand-new insecticide called Gaucho® with imidacloprid as active ingredient was being applied to sunflowers.<sup>156</sup> In 2003, and new longer acting insecticide, Clothianidin, was given conditional registration by the US EPA<sup>157</sup> but, 10 years on, field trials for its effects on honey bees are still lacking. It is also extremely persistent in the soil.<sup>158</sup> The half-life in soil of clothianidin ranged from 13-1386 days. In a later trial it was still in the soil at 19 years, but the US EPA decided to discount that figure.

### **Evidence of neonicotinoid toxicity sent to the US Environmental Protection Agency**

On 22/03/2011, we sent the above evidence about contamination of Dutch surface water and invertebrate declines to the US EPA, with supporting evidence.

Ms Gesalman, Communications Officer replied on 15/04/2011: *“With regard to potential effects on non-target invertebrates and surface water contamination, EPA is not aware at this time of any data demonstrating an imminent hazard from clothianidin..... If you are aware of reliable data that demonstrate an imminent hazard as defined by federal pesticide law, please forward to me the author’s name, publication name (peer-reviewed publications are preferred).*

We sent an email on 24/04/2011.

*“Dear Ms Gesalman, You do not need science to see what is happening to the environment. Just stand in the middle of a field of oil-seed rape. Where are all the insects? Twenty years ago if you drove 200 miles in the UK you would have to stop to clean insects from your windscreen and headlights. In 2004, in June, 40,000 drivers found, using a device attached to their number plates, there was just 1 insect per 5 miles. Probably, 7 years later, there are even fewer. Perhaps nobody cares much for insects? But there are other sinister events that signify that the environment is acutely sick; catastrophic (but little publicised) declines in a wide variety of species in the US (and later in Europe); honey bees, frogs, bats, bumblebees and birds.”*

### **A Task Force on Systemic Insecticides published on the IUCN website on June 2014<sup>159</sup> has revealed that they pose a global threat to Biodiversity and Ecosystem Services<sup>160</sup>**

It took Dr Henk Tennekes more than 4 years before his findings were vindicated. The *Worldwide Integrated Assessment* was produced by an independent Task Force on Systemic

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<sup>155</sup> <http://www.farmlandbirds.net/en/content/human-health-and-global-biodiversity-lies-hands-pesticides-industry>

<sup>156</sup> <http://www.stmconnect.com/jeit/content/1/1/jeit1.abstract> Immune suppression by systemic neonicotinoid insecticides at the root of global wildlife declines

<sup>157</sup> <http://www.epa.gov/opprd001/factsheets/clothianidin.pdf>

<sup>158</sup> Footprint Database: International Union of Pure and Applied Chemistry (IUPAC)

<http://sitem.herts.ac.uk/aeru/iupac/>

<sup>159</sup> [http://www.iucn.org/news\\_homepage/all\\_news\\_by\\_theme/species\\_news/?16025/Systemic-Pesticides-Pose-Global-Threat-to-Biodiversity-And-Ecosystem-Services](http://www.iucn.org/news_homepage/all_news_by_theme/species_news/?16025/Systemic-Pesticides-Pose-Global-Threat-to-Biodiversity-And-Ecosystem-Services)

<sup>160</sup> [http://www.tfsp.info/wp-content/uploads/2014/06/8\\_ESPR\\_11356\\_2014\\_3229\\_OnlinePDF.pdf](http://www.tfsp.info/wp-content/uploads/2014/06/8_ESPR_11356_2014_3229_OnlinePDF.pdf)

Conclusions of the Worldwide Integrated Assessment on the risks of neonicotinoids and fipronil to biodiversity and ecosystem functioning.

Pesticides and “*is the most comprehensive review of evidence on neonicotinoids to date.*” It was confirmed that they are causing significant damage to a wide range of beneficial invertebrate species and are a key factor in the decline of bees.

#### “Data Gaps

- *Almost as concerning as what is known about neonics, is what is not. There is little data about the quantities of systemic pesticides being applied, nor is there much screening of concentrations of neonics in the environment. Where screening has been carried out neonics and fipronil are often detected.*
- *Toxicity to most organisms has not been investigated. E.g. toxicity tests have only been carried out on four of the approximately 25,000 known species of bee, and there have been hardly any studies of toxicity to other pollinator groups such as hoverflies or butterflies.*
- *Toxicity to vertebrates (such as granivorous mammals and birds which are likely to consume dressed seeds) has only been examined in a handful of species.*
- *Sub-lethal effects have not been studied in most organisms, yet they are known to be profound in bees, and for those few other species where studies have been done, sub-lethal doses of these neurotoxic chemicals have been reported to have (mostly) adverse impacts on behaviour at doses well below those that cause death. “*

There are now papers to show they are also responsible for bird declines.<sup>161,162</sup> However, as usual, an Editorial in *Nature* manages to cast doubt on the findings.<sup>163</sup> “*So the provocative findings published in a paper on **Nature’s** website this week must be taken as a question themselves, rather than a definitive answer. In the paper, researchers suggest that common agricultural pesticides that have long been linked to the decline in some bee species could also be affecting birds.*” Who wrote the Editorial? Could it have been the same Syngenta-funded researcher who commented on the bumblebee study in *Nature*<sup>164</sup> on 01/11/2012? ‘*In summary, this single study does not provide a full explanation for bee declines nor a definitive answer to questions about how to change pesticide regulations’*

**An ex-US EPA employee says that the bees in the US have almost gone:<sup>165</sup> he describes the corruption amongst Regulators at the top of the US EPA, and what happened to ecologists who pointed out the effects of these neurotoxic weapon-like biocides which should have NO PLACE IN AGRICULTURE**

Evaggelos Vallianatos (December 2013) wrote: “*In my 25-year experience at the US EPA, nothing illustrated the deleterious nature of ‘pesticides’ and ‘regulation’ better than the plight of honeybees. Here is a beneficial insect pollinating a third of America’s crops, especially fruits and vegetables, and we thank it with stupefying killing. Poisoning of honeybees became routine in the mid-1970s with the EPA’s approval of neurotoxins encapsulated in dust-size particles that took days to release their deadly gas. Some of my EPA colleagues denounced such misuse of science and public trust. They told their bosses those encapsulated neurotoxins were weapon-like biocides that should have no standing in agriculture and pest management. Indeed, one of those EPA ecologists discovered the neurotoxic plastic spheres in the honeybee queens’ gut. This meant poison in the honey.*

<sup>161</sup> [http://www.abcbirds.org/abcp/programs/policy/toxins/Neonic\\_FINAL.pdf](http://www.abcbirds.org/abcp/programs/policy/toxins/Neonic_FINAL.pdf)

<sup>162</sup> <http://www.nature.com/nature/journal/vaop/ncurrent/full/nature13531.html>

<sup>163</sup> <http://www.nature.com/news/be-concerned-1.15516>

<sup>164</sup> Gill, RJ, Ramos-Rodriguez O, Raine, NE. Combined pesticide exposure severely affects individual – and colony- level traits in bees. <http://www.ncbi.nlm.nih.gov/pubmed/23086150>

<sup>165</sup> [http://www.huffingtonpost.com/evaggelos-vallianatos/honeybees-on-the-verge-of\\_b\\_4326226.html](http://www.huffingtonpost.com/evaggelos-vallianatos/honeybees-on-the-verge-of_b_4326226.html)

*EPA acted with fury. It forced the scientist out of his laboratory and into paper pushing in Washington. Approval of the industry's neurotoxins expanded to cover most major crops. This meant honeybees had less and less space to search for food without dying. A few days ago I called up a beekeeper inviting him to an environmental conference planned for June 2015. He declined because, he said, there would be no honeybees left in another year or two.”... “Exposure,” he concluded, “as low as one tenth of a part per billion can be fatal to honey bees.””*

**In 1990, Britain prepared the way for ‘Big Ag’ to rule the UK environment: by splitting the Nature Conservancy Council (NCC) and wiping out environmental organisations**

The NCC had been a thorn in the flesh of politicians in both England and Scotland and undoubtedly Derek Ratcliffe (Chairman of the NCC) was their most outspoken and troublesome Civil Servant. Within days of his retirement in 1989, Margaret Thatcher’s then Environment Minister, Nicolas Ridley (uncle of Viscount Matt Ridley, failed banker and brother-in-law to Owen Paterson) set about dismembering the NCC. Scottish politicians were keen on the split; they had greatly resented interference by the English in Fountains Forestry’s project, because it had provided many jobs in an area of low employment.

So, as part of the Environmental Protection Bill 1990, in 1991 the Nature Conservancy Council, the UK body that had originally catalogued and designated important Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs) for legal protection, was split into three separate bodies, English Nature, Scottish Natural Heritage and the Countryside Council for Wales. Statements issued by two Ministers, Lord Hesketh in England and Malcolm Rifkind in Scotland, claimed they ‘*wanted to do something for the benefit of conservation.*’ However, in a leaked confidential report prepared by the Treasury in 1990 indicated that nature conservation was definitely not intended to be a beneficiary: “*The proposed reorganisation was an administrative reorganisation not intended to affect conservation effort*”. It was pointed out that to triplicate posts in England, Wales and Scotland was a profligate waste of public resources. The net additional benefit to conservation would be close to zero.

Thus began the period in which successive UK governments carried out major (and costly) reorganisations of their environmental bodies that would weaken their power and downgrade them, both in importance and in financial terms. They would lose their own independence and be become buried in departments, which, in times of crisis, would leach money from their budgets.

**Closure of Wildlife Research Stations**

The most outrageous and devastating change for the natural environment in the UK occurred when Tony Blair, Lord Sainsbury and the Natural Environment Research Council (NERC) closed down the Wildlife Research Stations in 2006 “*in order to balance the books*”. The so-called ‘Public Consultation’ by NERC elicited 1,327 ‘stakeholder’ responses to the proposal, of which 99% questioned the wisdom and expense of the closure. However, Lord Sainsbury defended the closures. He praised NERC for “*grasping the nettle.*” He said NERC had seen a fall in contract research in recent years and the Wildlife Stations were not making enough money from getting private research contracts. Barely 3 months from the start of the consultation, NERC confirmed their plans to restructure the Centre for Ecology and Hydrology (CEH). In a letter to the staff dated 13/03/2006 Professor Alan Thorpe said: “*CEH will remain a science-driven, not a site-based organisation.*” He anticipated that the cost of restructuring would be about £43 million over 4 years, but it would lower CEH operating costs by over £7 million per year. He said that the Council greatly regretted the

impact on CEH staff, and made some concessions. Up to 40 of the 200 posts at risk could be saved.

### **Nothing to do with money, but with reducing direct observations of wildlife declines**

Later in the same year NERC and the Chief Scientist made a generous allocation to Dundee University to increase their budget for their ‘*Crops for the Future*’ Programme. In 2012 NERC proudly announced its GloboLakes project;<sup>166</sup> “*the first satellite-based global lake surveillance system, to monitor how lakes and reservoirs are being affected by environmental change.*”<sup>167</sup> How can one measure pesticide levels in aquatic systems, or biodiversity declines, from space? This vastly expensive project could have supported more than a dozen Wildlife Research Stations; but satellite monitoring is a safer distance from the industry’s point of view. A satellite is even more remote from the environment than the new breed of population biologists making mathematical models on a computer and applying doubtful statistical analyses. I am told it is now possible to have a degree in biology without having stepped out into the field.

### **Why did David Cameron appoint Owen Paterson as Environment Minister?**

Was it because he was the most anti-Environment MP he could find? He has ignored climate change. “*The Environment Secretary, Owen Paterson, has never been briefed on climate change by the Government's chief scientist since taking up his Cabinet post 14 months ago, The Independent has learnt.*”<sup>168</sup> A Freedom of Information request revealed that the man in charge of preparing Britain for the effects of climate change has received just two briefings on the subject since taking up his post. Neither of them was from Sir Ian Boyd, the Chief Scientific Adviser at Mr Paterson's Department for the Environment, Food and Rural Affairs (Defra).” He has secretly and vigorously worked with the pesticides industry (and against civil society) to stop the ban on neonicotinoid insecticides<sup>169</sup> and to bring in GM Crops.<sup>170</sup> His choice for the new Chairman of Natural England was an investment banker with a venture capitalist business.<sup>171</sup> His attitude to badgers arose from a combination of ignorance, cruelty and anti-science. “*I am not moving anything – the badgers are moving the goalposts.*”<sup>172</sup>

### **Monsanto was given special treatment by the Whitehall Government, against Wales<sup>173</sup>**

“*In 2003, the residents of Groesfaen began to complain about vile smells emanating from the Brofiscin quarry, a 36-meter deep quarry located at the edge of the village. More alarming still, the waters of the stream that flowed around the quarry began to turn vivid orange... The investigation revealed that a Monsanto-owned plant in Newport (a city near Groesfaen) had paid contractors to illegally dump thousands of tons of cancer-causing chemicals - among them PCBs, dioxins and Agent Orange derivatives - into the Brofiscin quarry between 1965 and 1972.*”<sup>i</sup> These chemicals, which had corroded their containers and were leaching into the

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<sup>166</sup> <http://www.globolakes.ac.uk/>

<sup>167</sup> <http://www.stir.ac.uk/2012/uk-scientists-to-revolutionise-lake-research-in-2.5-million-pound-global-project/name-31073-en.html>

<sup>168</sup> <http://www.independent.co.uk/news/uk/politics/environment-secretary-owen-paterson-has-yet-to-be-briefed-on-climate-change-by-chief-scientist-sir-ian-boyd-8912738.html>

<sup>169</sup> <http://www.guardian.co.uk/environment/interactive/2013/apr/29/environment-secretary-letter-syngenta-insecticide-ban>

<sup>170</sup> <http://tinyurl.com/9jbce4g> Attendees; <http://tinyurl.com/8ahylza> Agenda; <http://tinyurl.com/92rrain>

<sup>171</sup> <http://www.monbiot.com/2013/12/06/transylvanian-count-to-chair-bloodbank/>

<sup>172</sup> <http://www.theguardian.com/environment/2013/oct/09/badgers-moving-goalposts-owen-paterson-cull>

<sup>173</sup> [http://www.naturalnews.com/044009\\_Monsanto\\_Brofiscin\\_environmental\\_damage.html](http://www.naturalnews.com/044009_Monsanto_Brofiscin_environmental_damage.html)



soil, not only endangered the lives of the local villagers but also those of the more than 350,000 residents of Cardiff, since the chemicals were coming into contact with a major underground aquifer that was (and still is) destined to be the city's main water supply.”

The Environment Agency - a government agency concerned with flooding and pollution – was hired to clean-up the site in 2005.

“Firstly, the Agency repeatedly failed to hold Monsanto accountable for its role in the pollution (a role that Monsanto denied from the outset). Secondly, the Agency consistently downplayed the dangers of the chemicals themselves, even claiming that they offered no “identifiable harm or immediate danger to human health” in their official report.”

“In 2011, Monsanto reluctantly agreed to help the Environment Agency clean-up the Brofiscin quarry when the latter discovered that many of the 67 chemicals detected on the site were exclusively manufactured by the former. Nonetheless, the clean-up effort remains underfunded and inefficient, and the Brofiscin quarry remains the most contaminated site in the United Kingdom.”

### **Japanese knotweed on which glyphosate is sprayed for ‘eradication’ was introduced in the 1500s, not in Victorian times, as claimed by the BBC and the Pesticides Industry.**

We have found historical and chronological evidence to show that the herbicide glyphosate (or other herbicides that are used as alternatives) is responsible for the transformation of garden escapes into super-weeds (in the UK these are termed ‘invasive species’). Japanese knotweed (*Reynoutria japonica*) was introduced into Holland by an amateur Dutch botanist, Van Reynoutre in the late 16<sup>th</sup> Century. For 500 years it caused few problems.

### **Repeated use of chemical herbicides have transformed them into invasive weeds**

In the early 1900s experiments were made with chemical herbicides. In 1941 2,4-D was discovered in the US and the UK (Rothamsted Research) at the same time. It was commercialized in 1946: atrazine in 1958, dicamba in 1967 and glufosinate in 1991.

Glyphosate was introduced into Europe in 1974 and became a global best-selling herbicide because the public was told by industry and the regulators that it was ‘safe.’ Everything changed because it was used repeatedly in the same areas and knotweed developed resistance to it. “The rampaging spread across Britain in the late 1970s and 80s is regarded as a parable of the dangers of casually introducing alien species into the countryside.”<sup>174</sup>

### **In 1969 it was still being recommended by the Royal Horticultural Society (RHS)**

However, in 1969 in the UK<sup>175</sup> it was still being promoted as a plant suitable for larger gardens, as was the Balsam species *Impatiens glandulifera (royalei)*. Both plants became super-weeds and were classified as invasive species in the 1981 Wildlife and Countryside Act<sup>176</sup> (In the US, the first confirmed Glyphosate-Resistant weed, rigid ryegrass, was reported in 1998. Super-weeds in the US in GE cropping systems are now a massive problem<sup>177</sup>).

### **Direct application of Roundup® to water should be avoided**

Glyphosate was used for 3 years in rivers in Washington State<sup>178</sup> (Legal Status of Noxious Weeds<sup>179</sup>). However, in 1996 the Attorney General of the State of New York Consumer

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<sup>174</sup> <http://www.theguardian.com/books/2010/oct/10/weeds-richard-mabey-review>

<sup>175</sup> Marshall Cavendish Illustrated Encyclopaedia of Gardening 1969.

<sup>176</sup> <http://www.legislation.gov.uk/ukpga/1981/69>

<sup>177</sup> <http://www.enveurope.com/content/24/1/24>

<sup>178</sup> <http://farmwars.info/?p=11137>

Frauds and Protection Bureau, Environmental Protection Bureau had convicted Monsanto for false advertising with regarding the safety of Roundup® herbicide, including its use in water.<sup>180</sup> Monsanto's claims contradicted the following statements required on the EPA-approved label for Roundup® at the time the claims were made: **ENVIRONMENTAL HAZARDS** Avoid direct application to any body of water.<sup>181</sup>

### **In the US, Benton County's 3-year control of river weeds; is it linked to the fatal birth defect anencephaly?**

Washington State has a Noxious Weed Control Board and glyphosate is the main herbicide recommended for noxious weed eradication. Benton County Herbicide treatment started in the Yakima River in 2010 and continued for 3 years without monitoring glyphosate levels in water.<sup>182</sup> Three Washington Counties (Yakima, Benton and Franklin) sharing the same irrigation water for agriculture, reported a high number of pregnancies resulting in a fatal birth defect, anencephaly.<sup>183</sup> The cause was 'a mystery' to state health officials.<sup>184</sup>



### **Glyphosate-Resistant Super-weeds: an economic reason for not spraying chemicals**

Even the Chemical Companies have admitted to weed resistance. A press release from Dow in January 2014 urges the USDA to authorise their new GM corn and soy tolerant to a

<sup>179</sup>

<http://agr.wa.gov/plantsinsects/weeds/npdespermits/docs/IPMFreshwaterEmergentNoxiousQuarantineListedWeeds.pdf>

<sup>180</sup> <http://farmwars.info/?p=11565> page 13

<sup>181</sup> <http://www.mindfully.org/Pesticide/Monsanto-v-AGNYnov96.htm>

<sup>182</sup> <http://agr.wa.gov/plantsinsects/weeds/npdespermits/docs/IPMFreshwaterEmergentNoxiousQuarantineListedWeeds.pdf>

<sup>183</sup> <http://farmwars.info/?p=11137>

<sup>184</sup> <http://abcnews.go.com/Health/washington-state-health-officials-stumped-high-rate-birth/story?id=19687592>

combination of 2,4-D (part of the Agent Orange defoliant) and glyphosate.<sup>185</sup> *“New data from November of 2013 indicate an astonishing 86 percent of corn, soybean and cotton growers in the South have herbicide-resistant or hard-to-control weeds on their farms. The number of farmers impacted by tough weeds in the Midwest has climbed as well, and now tops 61 percent. Growers need new tools now to address this challenge.”*

### **Why does Prime Minister David Cameron hate Wales?**

Polly Toynbee wrote in the Guardian on Friday March 7<sup>th</sup> 2014:<sup>186</sup> *“David Cameron has mentioned Wales 29 times in Prime Minister's Questions, which sounds reasonable because he is its prime minister too – except that every single mention has been derogatory and contemptuous. The Conservatives detest everything Welsh.”* He has said the Health Service in Wales is a disgrace on several occasions since then (and so has Jeremy Hunt).

### **Are there reasons for the Prime Minister's regular attacks on Wales?**

Polly Toynbee goes on to say: *“Most poisonous have been Tory scares on health, driven by need to prove that Welsh refusal to put its services out to tender to private companies produces worse results. ... Wales has the oldest and sickest population in Britain, with the highest post-industrial disease and thousands moving there to retire.”*

We can add some other possible reasons. The Wikileaks' Paris Cables exposed the fact that Monsanto was using US Ambassadors to punish EU countries for opposing GM crops.

### **Wikileaks exposed information about US targeting the EU over GM crops<sup>187</sup>**

When France made moves to ban Monsanto's GM Maize 810 in 2007, US embassy cable recommended drawing up a list of countries for retaliation over opposition to genetic modification.<sup>188</sup> Ambassador Craig Stapleton wrote on 14/12/2007: *“Country team Paris recommends that we calibrate a target retaliation list that causes some pain across the EU since this is a collective responsibility, but that also focuses in part on the worst culprits. The list should be measured rather than vicious and must be sustainable over the long term, since we should not expect an early victory. Moving to retaliation will make clear that the current path has real costs to EU interests and could help strengthen European pro-biotech voices,”* said Stapleton, who with Bush co-owned the Dallas/Fort Worth-based Texas Rangers baseball team in the 1990s. The cables show that US diplomats were working directly for GM companies such as Monsanto. It is no wonder that the US and the UK governments were anxious about Wikileaks revelations and said that national security was being compromised. Does David Cameron's aggressive attitude arise from the fact that the Welsh Government is opposed to GM cultivation? However, so is the Scottish Government and indeed the Scottish Health figures were only marginally better than those of Wales (or England for that matter). But Scotland must be wooed in case it runs off with the UK oil and gas supplies, whereas David Cameron does not think that Wales has any assets to benefit “growth in the economy”, unless of course he had Wales in mind to be ‘fracked’, to add more chemicals to the groundwater to those that already exist. The Highest Court in France has banned fracking in France: so Britain is going to be ‘fracked’ by a Company from France.

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<sup>185</sup> <http://newsroom.dowagro.com/press-release/dow-agrosciences-statement-about-usda-announcement-regarding-draft-environmental-impac>

<sup>186</sup> <http://www.theguardian.com/commentisfree/2014/mar/07/lessons-real-job-creation-wales>

<sup>187</sup> <http://wikileaks.org/cable/2007/12/07PARIS4723.htm>

<sup>188</sup> <http://www.theguardian.com/world/2011/jan/03/wikileaks-us-eu-gm-crops/print>

### **BBC has been used to promote ‘fracking’ on behalf of the government**

On Farming Today<sup>189</sup> in July 2014, a Dairy Farmer in Northern England was interviewed about a projected fracking site within 2 miles of his farm, from which he fears contamination of his milk. The only person interviewed was Matt Lambert from Cuadrilla, the Fracking Company who was reassuring. He said in the UK it would be strongly regulated and quoted the Environment Agency and the Health and Safety Executive.

### **Why is the population of South Wales sicker than that in England?**

The above failure of the Environment Agency to hold Monsanto accountable for dumping its chemical waste in the valleys is only part of the reason. The other reason that the population of Wales is sicker than that in England is because the English Chemicals Regulation Directorate authorizes glyphosate (an antibiotic, we have recently discovered) to be sprayed on invasive weeds (Glyphosate-Resistant super weeds) on former industrial sites in unknown and unmonitored quantities. The contractor was observed to be spraying around houses and in villages, past schools, libraries and surgeries where children are exposed. The public is receiving this exposure to glyphosate in addition to that now found in residues in their staple foods. Meanwhile the South Wales epidemic of childhood obesity is out of control; neurobehavioral disorders are more common, depression is rife, each week the population is becoming sicker; obesity, diabetes, high cholesterol levels, multiple myeloma, breast cancer, colon cancer, oesophageal cancer, melanoma, leukaemia, non-Hodgkin’s lymphoma, pancreatic cancer, multiple sclerosis, Parkinson’s Disease, ovarian cancer, motor-neurone disease and glioblastoma (a particularly aggressive form of brain tumour). Some individuals have had three or four different cancers.

### **Glyphosate was present in drinking water in South Wales**

In August 2013, the level of glyphosate in one Welsh river draining from areas of Japanese knotweed spraying was 190 parts per trillion (ppt) and local tap water was 30 ppt. These were of the order of concentrations found in a study in 2013 which showed that breast cancer cell proliferation is accelerated by glyphosate in extremely low concentrations: “*The present study used pure glyphosate substance at log intervals from 10<sup>-12</sup> to 10<sup>-6</sup> M. These concentrations are in a crucial range which correlated to the potential biological levels at part per trillion (ppt) to part per billion (ppb) which have been reported in epidemiological studies.*” This study was excluded by the Glyphosate Task Force (RAR). Our local Council refused to stop spraying until they were instructed by the Chemical Regulations Directorate, or the Health and Safety Directorate.

### **Wildlife Law: Control of Invasive Non-native Species<sup>190</sup> from the Law Commission**

“*On 11 February 2014, we published our final report, Wildlife Law: Control of Invasive Non-native Species. This is the first item to be delivered from the full project. This element of the project was brought forward at the request of Defra and the Welsh Government to enable them to consider whether to introduce early legislation.*”

If landowners do not comply, this new law will give the relevant body (Defra, the Welsh Government and statutory bodies such as the Environment Agency, Forestry Commission, Natural England and Natural Resources Wales) the power to enter land for the purposes of species control. Japanese knotweed is among the plant species specified. But the law appears to be coy about specifying the method of eradication.

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<sup>189</sup> <http://www.bbc.co.uk/programmes/b048nkjf>

<sup>190</sup> <http://lawcommission.justice.gov.uk/publications/2612.htm>





*Northern Indiana. Giant Ragweed (3 m) resistant to glyphosate. Farm workers have to weed it by hand. This is one of nine different weeds that commonly occur. (By 2014, 22 have been documented)*



*2012 Japanese knotweed invasion around a proposed building site in the Swansea Valley<sup>191</sup> : “They were 2-3 metres in height and formed a closed canopy.”*

## **Independent papers on environmental damage**

### **Effects of glyphosate on earthworms, songbirds, small mammals and bees**

Repeated applications of glyphosate significantly affected the growth and survival of Earthworms.<sup>192</sup> Songbirds<sup>193</sup> and Small Mammals<sup>194</sup> were reduced by the use of glyphosate in

<sup>191</sup> <http://www.swansea.gov.uk/index.cfm?articleid=15838>

<sup>192</sup> Springett, J.A, Gray R.A.J. Effect of repeated low doses of biocides on the earthworm *Aporrectodea caliginosa* in laboratory culture. *Soil Biol. Biochem.* 1992, 24(12): 1739-1744.



forest management. The mortality rates of Honeybees were greater when fed glyphosate supplemented diets.<sup>195</sup> Glyphosate is genotoxic to both fish<sup>196</sup> and amphibians<sup>197</sup> and additional predatory stress made Roundup® twice as lethal. The Monarch Butterfly<sup>198</sup> is declining rapidly as a result of GM Roundup® Ready corn and soybeans. Glyphosate applied liberally by farmers kills off milkweed, the food plant of the Monarch.

### **Glyphosate causes immune suppression in fish**

Synergistic effects of glyphosate formulation and parasite infection on fish malformations and survival:<sup>199</sup> *This is the first study to show that parasites and glyphosate can act synergistically on aquatic vertebrates at environmentally relevant concentrations, and that glyphosate might increase the risk of disease in fish. Our results have important implications when identifying risks to aquatic communities and suggest that threshold levels of glyphosate currently set by regulatory authorities do not adequately protect freshwater systems.*

In fact most pesticides cause immunosuppression in wildlife particularly in combination. Neonicotinoid insecticides<sup>200</sup> and atrazine<sup>201</sup> have also been postulated to be at the root of wildlife declines by causing epidemics of diseases in wildlife; honeybees, amphibians, bats, birds and fish due to immune suppression. It is of interest that areas in Central America where epidemics of deaths due to kidney disease of unknown etiology (CKDu)<sup>202</sup> have occurred amongst sugar cane workers (where there is aerial spraying of glyphosate) coincide with areas where mass extinction of amphibians from chytrid fungus have occurred.<sup>203</sup>

Swanson, in her synopsis of the toxicology section of the RAR produced by the Glyphosate Task Force,<sup>204</sup> notes that many of these papers were excluded from consideration, or dismissed by industry, or absent.

### **Longitudinal photographic records of a small nature reserve in South Wales (2006-2014) shows biodiversity declines where there is glyphosate in drinking water. The Year of the Bumblebee. Observations in a small Nature Reserve (2)**

In December 2010, we sent a copy of this photo-journal to about 50 Ministers, Civil Servants and Heads of NGOs when we informed them about the toxicity of the Systemic Neonicotinoids.<sup>205</sup> (Had they read it, they would have noticed the Postscript: A history of the UK Governments' responses to the Biodiversity Crisis.) Over a period of 8 years, many of

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<sup>193</sup> Santillo DJ, Brown PW, Leslie DM. Response of songbirds to glyphosate-induced habitat changes on clearcuts. *J Wildlife Manage.* 1989, 53: 64–71

<sup>194</sup> Santillo DJ *et al.* Responses of small mammals and habitat to glyphosate application on clearcut. *J Wildlife Manage.* 1989, 53 (1): 164-172

<sup>195</sup>

[http://k12science.missouristate.edu/Junior\\_Academy/MJAS%20Docs/State%202009/Papers%202009/HS\\_ENV/Foulk\\_Kayla\\_HS.pdf](http://k12science.missouristate.edu/Junior_Academy/MJAS%20Docs/State%202009/Papers%202009/HS_ENV/Foulk_Kayla_HS.pdf)

<sup>196</sup> <http://link.springer.com/article/10.1007%2Fs10661-012-2783-x>

<sup>197</sup> <http://training.fws.gov/EC/Resources/pesticides/Aquatic%20Effects/Relyea2005.pdf>

<sup>198</sup> [Unraveling the annual cycle in a migratory animal: Breeding-season habitat loss drives population declines of monarch butterflies](#) DT Tyler Flockhart, JB Pichancourt... -*Journal of Animal Ecology*, 2014

<sup>199</sup> <http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2664.2010.01791.x/pdf>

<sup>200</sup> <http://www.stmconnect.com/sites/default/files/20140511075931.pdf>

<sup>201</sup> Kiesecker, J.M. Synergism between trematode infection and pesticide exposure: A link to amphibian deformities in nature? *Proc Natl Acad Sci USA* 2002; 99(15):9900-4.

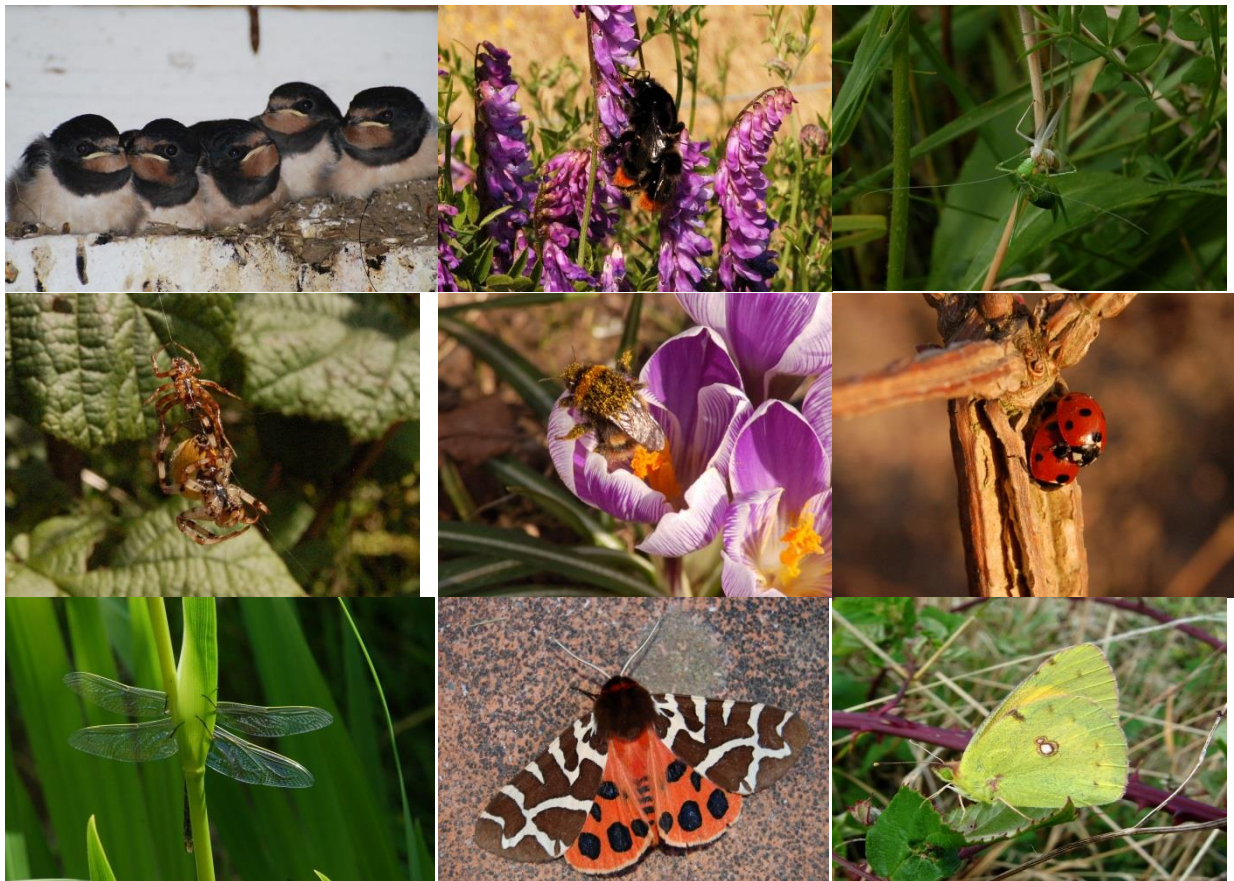
<sup>202</sup> <http://www.icij.org/project/island-widows>

<sup>203</sup> <http://www.pnas.org/content/103/9/3165.abstract>

<sup>204</sup> [https://www.academia.edu/7595699/Glyphosate\\_re-assessment\\_in\\_Europe\\_is\\_corrupt\\_Toxicology](https://www.academia.edu/7595699/Glyphosate_re-assessment_in_Europe_is_corrupt_Toxicology)

<sup>205</sup> <http://www.blurb.co.uk/books/1737995-the-year-of-the-bumblebee>

the species in the reserve have disappeared, or become greatly reduced in numbers. Greenfinches (*Carduelis chloris*), which had been appearing in winter flocks of 250-400 to feed on sunflower and barley, have all but disappeared due to infection with a protozoal organism, *Trichomonas gallinae*, which invades the bird's crop and mucosal lining of the beak.<sup>206</sup> In August 2013, we found that several plant species had been affected by a type of mildew, something that has recurred in July 2014. The striking green, black and yellow caterpillar of the Mullein Moth (*Shargacucullia verbasci*) has been absent for two years. They used to strip our Greater Mullein (*Verbascum Thapsus*) and leave blackened areas with an exudate of a viscous liquid. Common Figwort (*Scrophularia nodosa*) became its target. But this year it is nowhere to be seen; in fact the tiny flowers, which used to provide nectar for Carder Bees and Wood Wasps, have mostly shrivelled before producing blossom. The Elephant Hawk Moth Caterpillar which fed continuously on Greater Willow Herb through thick mists before turning into a moth in 2009 hasn't been seen since 2010 when only one was found. There were only male red-tailed bumblebees in July 2013. So far, it appears that 2014 will be the same. We are at the height of summer. Swallows no longer nest in the garage. Insects have decreased in numbers and species; there are far fewer flying insects in the daytime, at night hardly any moths come to the street lights and bats are scarce. Insects are the canaries in the cage. Flying insects are the visible manifestation of a massive iceberg of trillions of unseen organisms present in terrestrial and aquatic ecosystems, which recycle and break down the soil. Earthworms are poisoned by glyphosate. The declines in pollinators will have a devastating effect on our ability to produce food.



<sup>206</sup> Lawson B, Cunningham A, Chantrey J, et al. Epidemic finch mortality. Vet Rec 2006; 159(11):367.

### Professor EO Wilson talking about the disappearance of insects

The eminent field entomologist from Harvard, who in his book *The Naturalist*, has documented massive global declines of ant colonies at the hand of man: has said:

*“If all mankind were to disappear, the world would regenerate back to the rich state of equilibrium that existed ten thousand years ago. If insects were to vanish, the environment would collapse into chaos.”*

### Can a collapse of global civilisation be avoided?

Professor Paul Erlich has written about this in increasing urgent terms.

Ehrlich PR, Ehrlich AH. Can a collapse of global civilization be avoided? *Proc R Soc B* 2013, 280: 20122845<sup>207</sup>. Ehrlich PR The MAHB, the Culture Gap, and Some Really Inconvenient Truths. *PLoS Biol* 2010, 8(4): e1000330. doi:10.1371/journal.pbio.1000330<sup>208</sup>

Here are some pertinent phrases from these papers:

- *There have been increasing signs of great toxic peril for humanity and its life-support systems, with a growing threat from the release of hormone-disrupting chemicals that could even be shifting the human sex ratio and reducing sperm counts*
- *destroying fables such as ‘growth can continue forever if it’s in service industries’, or ‘technological innovation will save us’*
- *reduction of the worship of ‘free’ markets*
- *Unfortunately, awareness among scientists that humanity is in deep trouble has not been accompanied by popular awareness and pressure to counter the political and economic influences implicated in the current crisis*
- *Without significant pressure from the public demanding action, we fear there is little chance of changing course fast enough to forestall disaster*
- *This will require developing mechanisms to force big corporations (including those in big agriculture and big pharma) to bear social responsibilities like the real individuals whose rights they legally want to assume*

### Permanent Peoples’ Tribunal (PPT) Bangalore 3<sup>rd</sup> - 6<sup>th</sup> December 2011

The six multinational agrochemical companies stood accused of grossly violating human rights by promoting reliance on the sale and use of pesticides known to undermine internationally recognised rights to health, livelihood and life.<sup>209</sup> This is a link to the evidence considered in the judgments against six Trans-National Corporations (TNCs) at the Permanent Peoples’ Tribunal (PPT) held in Bangalore and the final verdict of the nine judges (which was broadcast live on the internet).

Pages 35-37 contain a synoptic list of the cases which were submitted to the PPT and pages 38-40 the Programme of Sessions. After hearing evidence from witnesses over three days, the nine judges in the Tribunal concluded that the TNCs are responsible for gross, widespread and systematic violations of the right to health and life, loss of biodiversity, degradation of ecosystems, economic, social and cultural rights, as well as of civil and political rights, and women and children's rights.

### The Verdict

*“The last two days we have heard from 19 witnesses; 4 technical witnesses and 15 survivors who have vividly, through the experience and scientific research, compellingly substantiated the allegations made in the indictment.”*

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<sup>207</sup> <http://dx.doi.org/10.1098/rspb.2012.2845>

<sup>208</sup> <http://www.plosbiology.org/article/info%3Adoi%2F10.1371%2Fjournal.pbio.1000330>

<sup>209</sup> <http://www.agricorporateaccountability.net/en/page/ppt/167>

### **Summary of the Verdict by Members of the Jury**

Jury: Loss of biodiversity and degradation of ecosystems due to toxic pesticides have effect on life of indigenous peoples.

Jury: Loss of biodiversity and threats to indigenous peoples: undermines their way of life.

Jury: Threats and killings of public scientists and activists.

Dr Gianni Tognoni: Systemic toxicity and not isolated cases an expression of companies disregard to effects on populations.

Tognoni: There is a dramatic scarcity of independent research.

Jury: Pesticides and GMOs undermine communities.

Jury: Per toxicity of pesticides: there is structural bias in scientific literature pro-pesticides industry.

Juror Tognoni: No doubt there is proof of systemic toxicity and violation of human rights by agrochemical companies.

Elmar Altvater: Pesticide poisoning has been deregulated under neoliberal globalisation.

Altvater: Practices of agrochemical companies has led to economic/financial crises.

Altvater: Other consequences of agricultural TNCs are growing inequalities of hunger. Natural resources are being exhausted.

Paulo Ramazzotti: Pesticides and GMOs have social costs. Changes in traditions must be chosen by communities, not imposed by companies.

Jury: The key issue at stake is continuous generation of social costs; and lack of intervention by authorities.

Juror Ramazzotti: Agrochemical Companies treat people as expendable and dispensable forms of life, as mere commodities.

Jury: Pesticide corporations squelch information, prevent understanding and divide communities.

Juror Baxi says people should not be disregarded as factors of production or disposable. Dignity is key.

Chairman: Corporations have replaced responsibility with CSR – accountability to shareholders only.

Jury: Global Compact has produced little change and corporations can pick/choose human rights violations.

Jury: Agrochemical corporations are responsible for gross widespread violation of human rights.

Juries' recommendations: Governments to prosecute TNCs for criminal liability.

Jury recommends governments to take action to restructure criminal law to make them accountable, to legislate on the precautionary principle.

Jury recommends that patents should be secondary to human rights and protection of biodiversity.

*"Corporate totalitarianism ... rules through dispensability and corruption. It treats communities, people, countries, ecosystems and species as disposable and dispensable."*

Rosemary Mason MB ChB FRCA On behalf of Citizens against Big Ag, Big Pharma, Global News Corporations and the British and US Governments, who are working secretly against the People. 13/07/2014