

WN Editorial

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Biocides

Nature's revenge

This editorial concerns biocides – literally, ‘killers of life’. These are grossly and recklessly overused and abused as an intrinsic part of intensive aggressive industrial ‘modern’ agriculture and medicine. For over half a century, knowledgeable and thoughtful people have warned that there will be a time of reckoning, and even – as with human-made climate disruption – that the point of no return, of irreversible damage, may have been already reached. What is sowed, is reaped.

Humans are one species

The mad stupidity of assuming that humans are the masters of the planet and as such can destroy other species and wreck the natural world without care or consequences has been denounced for millennia. ‘You may drive out Nature, but she will ever hurry back, to triumph in stealth over your foolish contempt’, said the Roman poet Horace (65-8 BCE) in his *Epistles*. He was right then and he is right now. His warning is often cited by people who see the need for a right relationship for humans as a part of the living and physical world. It is used by T L Cleave (1906-1983) at the beginning of [*The Saccharine Disease*](#), his book identifying products made with refined flour and sugar as above all the dietary cause of a number of related chronic non-communicable diseases now known as the metabolic syndrome. His point is, [*in the words of Kenneth Heaton*](#), that ‘in order to preserve health you must eat foods which, apart from being cooked, are as near their natural state as possible’.

The ill-effects of the gross over-production and thus over-consumption of industrially processed substances far removed from nature, most of all in the form of edible ultra-processed products dependent on ‘refined’ sugar and flour, are a revenge of Nature. Further, the ‘foolish contempt’ for the Earth’s natural resources of land, water, air, and non-renewable sources of energy such as coal and oil, drives climate disruption – and here is the biggest picture of all, the prospects for survival of coherent human societies. Plenty of civilisations have been wiped out by previous examples of ‘foolish contempt’. Now the dangers staring us all in the face are global. Nature has no special concern for humans. The next dominant species may be ants.

Pesticides

Examples of Nature's revenge are in two *Updates* in this issue of *WN*. One, by *WN* editorial team member [Isabela Sattamini](#), is the consequences of intensive industrial agriculture, and 'factory' growing of fish, poultry, pigs and cattle, possible only because of systematic use of biocides. Her country of Brazil now uses more agricultural biocides than any other country, with sales currently at \$US 10 billion a year. Overall use has increased by 50 per cent in 7 years.

She writes following the news that glyphosate, the active ingredient in the vastly lucrative Monsanto product *Roundup*TM, has been identified as a probable cause of human cancer by the WHO International Agency for Research on Cancer. Remove biocides, such as herbicides, fungicides, insecticides, and intensive industrial methods to produce food and feed would collapse. However:

Agribusiness says pesticides are important in ensuring productivity needed to feed the growing world population. But agro-ecological farms can be and are as or more productive than industrial agriculture. In Brazil, the agro-ecology movement ensures farmers autonomy and health, as well as producing healthier and safer food.

All biocides are toxic. They are designed to kill living forms seen as unwanted or harmful. The idea that they are otherwise harmless is a fantasy. A proper reckoning would show that agricultural biocides do ever-increasingly far more harm than good. It should conclude that the only sane policy is to phase them out in favour of low- or no-chemical input farming as practiced for millennia, which continues to produce most of the world's food. The chances of this happening, which imply a new world society based on principles of equity and justice, with corporations tightly regulated, are the same as the chances of halting and reversing climate disruption.

Antibiotics

The second *Update* in this issue on biocides concerns antibiotics, or to be more precise antibacterials. These are also grossly overused and abused as an intrinsic part of the practice of the colossal business of modern medicine. Like agricultural biocides, if they were used carefully and respectfully in cases only of real need, at rates maybe of 0.5 per cent of current levels, they could overall have done more good than harm. But as with agricultural biocides, most antibiotics in use ever since half a century ago are designed to kill microbes that have become resistant to previous types of antibiotic. This is an ever-faster turning treadmill.

Used 'as directed' on the label following toxicological tests, the line taken by regulatory agencies is that they are safe, or at least that their benefits outweigh their dangers. On a population basis this is not true. Use of antibacterials on animals as well as on humans has been out of control for half a century and more. In the US alone, bacteria made multiply drug-resistant by use of antibiotics now contribute to or cause 100,000 hospital deaths a year. As *Update* writer Michael Purdey says, quoting microbiologist Gautam Dantas:

Strains of human disease that are much harder to treat have emerged. ‘We have already run out of drugs to treat some types of multidrug-resistant infections, many of which can be lethal, raising the bleak prospect of a post-antibiotic era’

Warnings like this, first made in the 1950s, are now media headlines all over the world. Fellow investigator Maria Dominguez-Bello cautiously sees the causal link

‘between decreased bacterial diversity, industrialised diets and modern antibiotics, and immunological and metabolic diseases, such as obesity, asthma, allergies and diabetes, which have dramatically increased since the 1970s. There is something occurring in the environment in the past 30 years that has been driving these diseases, and we think the microbiome could be involved.

The study described in *Update* is of a community of Yanomami native people in remote Amazonia, believed to have lived out of contact with other peoples. Their microbiomes – the natural populations of bacteria inside their guts – have a far more diverse balance of bacterial species than are found in the guts of industrialised populations. As so often, people living in balance with nature are telling those of us who lead ‘modern’ ways of life something we need to know, should we all be willing to listen, and to act personally and as professionals and citizens.

Biocides in the form of weapons of destruction kill populations and people identified as harmful. These are also used madly and stupidly by powerful governments against the people of vulnerable countries, in the deluded belief that there will be no blowback. The use of drones is a cause of the Islamic State. What goes round, comes round. This is a law of human nature, understood in the East as *karma*.

Langtang

[*Our cover commentary this month*](#), on the obliteration of the Himalayan village of Langtang by a vast fall of ice, rock and snow caused by the first earthquake in Nepal, is by fellow *WN* editorial team members Ashok Bhurtal and Dushala Adhikari, and colleagues. They show why understanding of nutrition in Nepal – and wherever resilient farmers can sustain their people even at times of hardship and as now in the Langtang catastrophe – comes from insight into and respect for lasting relationships between people and their lands, animals, crops and environments.

They report that food supplies from the farmlands of southern Nepal are plentiful, and that despite the earthquakes, rates of severe acute malnutrition in the most affected districts of the country are almost nil. Working in Nepal for WHO, Ashok tells us that he is now the nutrition specialist in the national team tasked to ensure food and nutrition security. Tremors and aftershocks are still being felt, and the monsoon is imminent. He also tells us that he and his wife Dushala now have 27 survivors of the Langtang catastrophe living with them in their home in Kathmandu. This is a time to be proud to contribute to, edit and publish *World Nutrition*.

The editors