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CAREER OF A CHEMICAL

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On December 14 2004 a governmental Apology was presented in Parliament for damage to Viet Nam war veterans by defoliant chemicals.

As the scientists who first (1971) pointed out to the New Zealand public the potential for birth defects caused by the dioxin in the herbicide 2,4,5-T, we would like to draw together main facts at this late stage in the career of a chemical.

Within New Zealand, this particular phenoxy herbicide was for a few decades widely used - to varying effect - on woody weeds *e.g.* gorse and manuka. The factory in New Plymouth was greatly expanded, and a 1:1 subsidy created for the manufacturer, at a time when the whole USA production of 2,4,5-T was being bought by the Pentagon for chemical warfare which was later stopped under pressure from highly respected American scientists such as Edsall of Harvard. US armed forces medicos had been reporting strong impressions of birth defect epidemics in the sprayed districts. Some NZ soldiers were also sprayed.

Some farming districts in New Zealand had higher densities of dioxin-containing 2,4,5-T aerially sprayed upon them than the total attributable to Agent Orange (50:50 2,4,5-T/2,4-D) in Vietnam. This was done mainly in springtime. Aerial drift onto human dwellings in these sparsely populated areas, as well as into local towns, was unavoidable, given the lax methods of spraying. Drinking water collected on roofs could, as we pointed out in 1971, contain dangerous doses of dioxin.

A rural GP got in touch with his cousin the medical school deputy dean: "Stop those staff of yours saying 2,4,5-T can cause birth defects! I've not noticed any increase in my district". Such statistics as had been voluntarily sent to the Health Dept from that district did actually show significant increases; and guess who had sent those figures in?! This illustrates how what you don't know can hurt you - considerable increases in harm can go unnoticed. We continued to press for creation of a mandatory system to report birth defects accurately.

A decade after this controversy began, statistics of some reliability were being gathered. One of us (R.E) discovered that the birth defect rates across Northland were correlated with the 2,4,5-T spray densities from one coast to the other.

The potential for harm of aerial spraying in New Zealand was always emphatically denied by the Health Dept and their buddies the Agricultural Chemicals Board whose dogged mantra intoned "no scientific evidence from anywhere in the world has yet been presented to the Board to support the contention that 2,4,5-T has adverse effects on human reproduction". Attempts to purge one of us (R.M) from university

employment were defeated only after expressions of resistance by hundreds of colleagues.

New Zealand was the last country to produce 2,4,5-T, and its dioxin content until the last few years of operation of the factory was high. Exposure of the factory's neighbours has been studied only very sluggishly, but looks high (from the partial results recently trickled out).

It took 18 years of sporadic strife to shut down that last 2,4,5-T factory. The replacement herbicide is one atom different but has, so far, escaped comparable scrutiny.

Three decades into this dishonesty-riddled dispute, it is now recognised that some Vietnam veterans, and some of their children, have suffered and continue to suffer ill health caused by aerially-sprayed dioxin in Vietnam. The same should also be recognised for all those in New Zealand similarly exposed - many with much higher exposure than soldiers in Vietnam who were, after all, voluntarily in harm's way.

Recent media superficialities have concentrated on cancer caused by dioxin. Many other types of damage, notably birth defects, are also expected from dioxin dosages imposed on New Zealanders. But let us never forget: the main harm from the USA's chemical warfare in Vietnam was on Vietnamese people and ecosystems. Could New Zealand's foreign aid make at least some gesture to those victims?

Dr Mann was a biochemistry lecturer, and Professor Elliott the head of paediatrics, in the Auckland medical school.