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CHAPTER 14

XIV. "THE ROYAL COMMISSION IS THE RANKING INVESTIGATORY AND ADVISORY BODY FOR THE NATION. IT IS THE GUIDE TO WHAT IS AND WHAT SHOULD BE DONE; IT IS THE IMPLEMENTATION OF THE SOVEREIGN INTENT THAT "RIGHT BE DONE"

THE AGENT ORANGE PHENOMENON:

THE REPORT OF THE AUSTRALIAN ROYAL COMMISSION

BY JOHN COOMBS QC LLB

WHY A ROYAL COMMISSION?

Australian Royal Commissions have a long history extending back to the time of William the Conqueror. It was observed of the British Royal Commission that it "is the ranking investigatory and advisory body of that country. It is the guide to what is and what should be done; it is the implementation of the Sovereign intent that 'right be done'."1 That established place in the British Governmental system led to the adoption by Australia of legislation concerning Commissions and each of its Governments has utilised the Royal Commission of Inquiry from time to time.

Such Commissions have an important role in Australian society. They provide a mechanism for independent and searching inquiry separate from and unfettered by the Government of the day. It is essential in every respect that that independence be maintained. The Parliamentary expert, Todd, said: "As Royal Commissions are not directly amenable to Parliament but only to the Crown, Parliament ought not to interfere with their proceedings unless

it can be shown that a Commission was acting unfairly or incompetently or was in some respect unworthy of the confidence of the Government".²

In Canada it was ruled that although a Commission could be terminated by Order-in-Council it could not be directed as to the procedure it should follow or how it ought to interpret its terms of reference.³ Indeed the Canadian Law Reform Commission recommended that there should be no control over "policy conclusions" of Royal Commissions and, further, that there should not even be budgetary restraint! There is little likelihood one might think of that recommendation being adopted by any Australian Government.

[Supreme court]

In the Australian High Court, Mr Justice Stephen (now Sir Ninian and Governor-General of Australia) said in R. v. Collins Exp. ACTU - Solo Enterprises Pty Limited⁴ a Royal Commission's "mode of conducting its inquiry is entirely unfettered either by statute or by executive direction".

The reputation that Royal Commissions enjoy in Australia of fearless impartiality and rigorous inquiry is in particular a result of public recognition of their independence and separation from Government. The use of Judges as Commissioners emphasises this independence and separation from the Executive. To be blunt, the regularity with which Royal Commissions bucket Governments and politicians enhances that reputation.

Three examples spring to mind. The Fraser Conservative Government appointed a Royal Commission to investigate certain suspected electoral irregularities in the State of Queensland. It was severely embarrassed when Fraser's close advisor, Senator "Toe-Cutter" Withers was found to be the architect of some misdeeds.

In New South Wales Justice Nagle inquired into the conduct of Prisons and his report brought down the Commissioner for Corrective Services after proof of systemised violence against prisoners.

The Costigan Royal Commission acutely embarrassed Federal and State Governments with its disclosures of organised crime, police inefficiency and unexplained cash transactions in high places.

Little wonder then that the Australian people accept the findings of Commissions and are confident in their independence. Little wonder too that the permanent bureaucrat always advises the Government of the day, "Never have a Royal Commission unless you already know the answer!"

This independence and its, at times, stubborn preservation have led to the use of Commissions to solve problems ^{from which} that the Government of the day wishes to distance itself ~~from~~ or which are politically too sensitive or too complex for the executive arms

to investigate.

So it was that the Agent Orange controversy was given into the charge of a Commissioner, the distinguished Federal Court Judge, Mr Justice Phillip Evatt DSC LLB, by Letters Patent dated 13 May 1985.

THE ROLE OF COUNSEL ASSISTING

I was appointed Senior Counsel Assisting. The role of Counsel Assisting is one which I accepted with pride. It is a responsible one involving not only the discovery, collection collation and presentation of the evidence⁵ but also representing the public interest.⁶ Counsel Assisting is completely independent.⁷ The independence of Counsel Assisting is important as is his role as the eliciter of facts. It [^] makes possible a separateness of the Commissioner and an objectivity which flows from not having to "descend into the arena" as Mr Justice Ashworth put it to the Salmon Royal Commission.⁸

Notwithstanding the independence of Counsel Assisting, there develops inevitably a closeness to the Commissioner. Counsel shares the commitment of the Commissioner to the public interest and to the ascertainment of the truth. He becomes confidante and sounding board and potentially at least private critic.

In the last resort, in the event of major disagreement about a matter crucial to the terms of reference he has the right and the duty to make public submissions in an open hearing to the Commissioner.

Why a Royal Commission in respect of Agent Orange and its fellow chemical agents? Firstly, the matter was controversial. Three Government Departments were directly involved, Veterans Affairs, Health and Defence. The protagonists (The Vietnam Veterans Association of Australia) [VVAA] had been vocal in their dissatisfaction with the epidemiological studies put in train by the Conservative Government and vehement in their rejection of the findings, somewhat tentatively expressed, of a Senate Select Committee.⁹ They sought a Royal Commission which Labor in opposition promised and delivered when in Government.

WAS A ROYAL COMMISSION AN APPROPRIATE FORUM?

Science and Law are long term comrades. In building and construction cases architects and engineers are the key witnesses. In personal injury cases medical evidence is often at the core of the conflict. In criminal trials forensic scientists are crucial. The so-called toxic tort has brought toxicology and epidemiology into the courtrooms of the world. So it is that those who actually fight such cases, usually in Australia barristers, strive to become familiar with scientific method and in particular case to learn enough of the discipline of a

particular science to be able to properly understand and adequately test the evidence of the professional scientist.

The comradeship above referred to is not surprising for the forensic method is truly similar to scientific method.

In scientific method observation leads to hypothesis development. After an hypothesis is postulated, (usual in null form) it is tested by careful data collection designed to disprove the hypothesis, or to fail to disprove it. If a number of investigators replicate the result, a scientific consensus about the hypothesis develops. It is scientifically sound if not necessarily final as Karl Popper is firm in reminding us.¹⁰

The forensic process begins with a statement of the protagonist's position similar to the hypothesis of the scientist. The Defendant pleads his defence and an issue or issues presents for trial. The protagonist leads that evidence which he feels supports his position.

This evidence is subjected to cross-examination, the legal laboratory tool. This process begins with a courteous insistence upon a common language. For example the phrase "neoplasms in the newly born" might be used by a witness. Any cross-examiner would insist upon a definition co-inciding with national statistics or at least convertible thereto so as to permit comparison of like with like. Next the cross-examiner explores the qualification

and experience of the witness so as to assess his or her opportunity for observation and skill in assessing that which has been observed. Next the data upon which the witness relies is explored with the witness by searching questioning and any apparent errors or misconceptions put to the witness for explanation. Then the witness is confronted with any other data which might be thought to be inconsistent with his conclusion, so as to permit him to defend and to display that there is no inconsistency if he can.

The process is rigorous: the biased, the careless and the incompetent are soon revealed. The careful competent scientist has his skill and thoroughness pointed up by proper testing. It is also similar in both philosophy and method to the work of the scientist.

The defender then calls his evidence which is subjected to the same process.

All this takes place under the control of a respected judicial officer who forms from it, in non-jury cases, a conclusion.

I have spent some time on the process because there have been suggestions that lawyers were inappropriate people to be exploring the Agent Orange, Chemical Agents question. It is my respectful submission that lawyers were entirely appropriately chosen for they are fitted both by training and experience to

assess scientific issues particularly where a multi-disciplinary approach was needed.

A WORD OF CAUTION

Karl Popper's model is rigorous only if based on data derived from controlled experiments. The Agent Orange data being human data is, like much epidemiological data observational only.

Further, it is said that one can never "prove" a negative. Strictly this is true but it can be said for practical purposes that if any alleged effect is not detected after extensive systematic professional search there is an extremely high probability that any effect is so small as to be undetectable and this can validly be accepted as proof of the negative in any legal context.

This problem has been perceptively analysed by Sir Richard Doll, in 1983 in The Royal Society's paper, Risk Assessment: Report of a Study Group.

But the theoretical limitation is of only small concern. If the claim is, for example, that Agent Orange has caused a large number of cancers in Vietnam veterans and the observational studies show no measureable increase then the claim is not made out.

An increase in the risk of cancer of 1×10^{-6} in humans exposed to 10 nanograms per kg body weight daily ^{for life} of TCDD was the only quantitative assessment made by WVAA.

Such theoretical risks are routinely disregarded by almost all individuals. Those who smoke heavily disregard the statistical assessment that the 3 pack a day man has at least a one in 100 risk of respiratory cancer and much higher risks of emphysema and cardiovascular disease. I do not suggest that they are wise.

Those who ride in motor vehicles in Australia take an annual risk of death or serious maiming injury of one in 400 at least, although seat belts and random breath testing are improving the situation. These precautions reflect good epidemiology.

Alcohol risks many orders of magnitude higher than that suggested by Dr Schneidermann for WVAA as the highest level of risk of cancer from TCDD exposure are also routinely taken, by me at least and no doubt many others.

Negligible risks can be and generally are ignored. Men and women rarely are willing to live like Howard Hughes. If they do the risks of madness are surely greater than the risks of illness by contact with negligible risks.

STANDARD OF PROOF

Unlike a scientist the lawyer must produce a final determination on the evidence before him. A report must be written, a judgment

delivered or a verdict found. He or she is not merely contributing to the state of the art. Thus just as the scientist states the confidence limits of his statistical findings the lawyer has a defined standard of proof for reaching conclusions. Such a standard applies in Royal Commissions as well as in party and party litigation. The Executive direction "to inquire" creates a context different from party and party litigation. In investigative Royal Commissions, of which this was one, there is no party who will "lose" if he fails to discharge the "onus" upon him to prove something to some defined standard.

As well, in such inquiries, the Tribunal informs itself in a wide-ranging manner and from many sources other than material produced by those given leave to appear.¹¹ In the Evatt Inquiry a huge pool of background information was available in addition to the oral evidence and the documents tendered. Further, the context may suggest in such an inquiry that the Executive wishes to know not only that which is found to be probably so, but also that which may possible be so.

It was such considerations that led Law Professor Hallett to say, "For most inquiries it is satisfactory that the standard of proof should be flexible".¹² But to say that the standard of proof is flexible is not to say that it is irrational nor that a Tribunal such as a Commission can be guided by anything other than standard common law rules. For these rules have their own flexibility. Professor Wigmore in his "Treatise on the Law of Evidence" said:

"In civil cases it should be enough to say that the extreme caution and the unusual positiveness of persuasion required in criminal cases do not obtain. But it is customary to go further, and here also to attempt to define in words the quality of persuasion necessary. It is said to be that state of mind in which there is felt to be a "preponderance of evidence" in favour of the demandant's proposition. Here, too, moreover, this simple and suggestive phrase has not been allowed to suffice; and in many precedents sundry other phrases - "satisfied", "convinced" and the like - have been put forward as equivalents and their propriety and a form of words discussed and sanctioned or disapproved, with much waste of judicial effort.¹³

Such a statement clearly countenances a degree of flexibility in the civil requirement. Dixon J (as he then was) said in Briginshaw v. Briginshaw (1938) 60 CLR 336 at 361, "No doubt an opinion that a state of fact exists may be held according to infinite gradations of certainty".

The Commission adopted as its standard of proof of any fact in the Inquiry the normal civil standard. It required itself to feel, as Dixon J. put it, "an actual persuasion of its occurrence or existence before it can be found".¹⁴ The affirmative of an allegation had to be made out to the Commission's reasonable satisfaction, as did the negative where relevant. The great common lawyer, Dixon J. continued:

But reasonable satisfaction is not a state of mind that is attained or established independently of the nature and consequence of the fact or facts to be proved. The seriousness of an allegation made, the inherent unlikelihood of an occurrence of a given description, or the gravity of the consequences flowing from a particular finding are considerations which must affect the answer to the question whether the issue has been proved to the reasonable satisfaction of the Tribunal. In such matters, 'reasonable satisfaction' should not be produced by inexact proofs, indefinite testimony, or indirect inferences. (Emphasis added).¹⁵

The Commission emphatically agreed.

THE REPATRIATION CONTEXT

For many years no onus was placed on a veteran and the Australian Government (to speak a little loosely) had to satisfy the tribunal beyond reasonable doubt of the insufficiency of grounds for granting a Repatriation claim.¹⁶ So, where an allegation of relevant outcome was made by WVAA, the Commission, if it was not satisfied that such allegation has been proved in accordance with the civil standard, observed (when it felt it was able and should) that the circumstances were such that it was "satisfied beyond reasonable doubt," that the allegation was not made out or

that an allegation was "fanciful";¹⁷ or had "no reasonable hypothesis to support it"¹⁸ or that it was "satisfied beyond reasonable doubt that there are insufficient grounds for accepting the allegation", all phrases chosen because of their use by holders of high Judicial office or legislators. Criticism of extravagant language should be evaluated in that context.¹⁹

Thus, the Commission considered that it should have regard to the sections of the Repatriation Acts relevant to the question of the onus and that standard of proof when considering what recommendations it might make.

RELEVANCE OF EPIDEMIOLOGICAL STUDIES

Another important influence or contextual matter bearing upon standard of proof was the epidemiological nature of the causation aspects of the Inquiry. The case for VVAA, in a nutshell, was that exposure to chemical agents in Vietnam has and is causing illnesses amongst veterans and birth defects amongst their children. This is classically an epidemiological case.

Epidemiology is as you know concerned with the patterns of disease occurrence in human populations and the factors that influence those patterns. The results of an epidemiological investigation may show a statistical association between a disease and an exposure or risk factor. The usual criteria for inferring that such an association is causal include the

following:

- (a) The statistical strength of the association;
- (b) The occurrence of a dose response relationship (the response is proportional to the dose of risk factor or exposure);
- (c) Observation that a decrease in an exposure is followed by a decrease in the frequency of the disease;
- (d) The temporal sequence of the relationship (ie the risk factor or exposure almost always precedes the outcome or disease);
- (e) The consistency or reproducibility of the association;
- (f) The specificity of the association; and
- (g) The biological plausibility of the association.

Support for a causal association is the stronger as more of these criteria are met.²⁰

The relationship of the risk factor and the disease are expressed in a number of ways: absolute risk, relative risk, odds ratio, and attributable risk. That these are different things is important and that absolute risk and relative risk are very different things is critical in the standard of proof context. By way of example, the annual incidence of lung cancer amongst

white Americans who smoke is approximately 1 per 1000 persons. However, the proportion of lung cancer attributable to smoking is close to 85%. The relative risk of developing lung cancer is 10 times greater in smokers than in non-smokers.²¹ Thus, even though a white American smoker does not have a 50.1% or greater probability of acquiring lung cancer, it is more probable than not that an individual's smoking caused his lung cancer.

Toxic tort litigation has not reached proportions in Australia similar to those pertaining in the United States. Accordingly, the very difficult problems that small absolute risks combined with even substantially increased relative risks have not yet exercised our appellate courts.

Accordingly, the Commission, when deciding questions of fact, sought to apply the principles referred to in respect of the civil standard of proof, remembering that such standard is flexible. And in reaching a decision as to whether a particular issue was proved to the reasonable satisfaction of the Commission, the epidemiological principles referred to above were borne steadily in mind.

THE COMMISSION'S APPROACH

After an initial and lengthy self-education program involving, inter alia, the collection and absorption of the available and relevant literature, the Commission proposed to the parties

hearings on aspects of the topic which were contentious and which were appropriate to the forensic method.

These were:

Exposure

Toxicology and Health Effects, including cancer

Reproductive outcomes

Mental Health

Mortality

And a VVAA presentation on Health Effects

In almost every topic area the Commission chose its own independent experts as witnesses. Counsel Assisting called every witness that VVAA sought to have called. These included ^{their} ~~the~~ pick of the US scientists who had assisted in the preparation of the US Agent Orange Class Action, where millions of dollars were spent attempting to prove the plaintiff's case. This is important. Cries of "David and Goliath" have been heard. I repeat every expert witness sought to be called by VVAA was called and at the Government's expense, through the Commission. Some thought helpful to the VVAA's position were called by the Commission itself, for example Dr Hardell and Brigadier Rodgers (The Australian Medical Corp Chief in Vietnam). Monsanto (Australia) Limited who appeared throughout also sought to have witnesses called on most topics and this was permitted. All were examined and cross examined.

The Commission also went into the laboratories and indeed into the very work sheets of many of the scientists who have worked in the field, in Australia, the USA, Vietnam and in Europe, with the total co-operation of all concerned.

Some examples of the "work in progress" are appropriate. The data of Lennart Hardell were relied upon by WVAA. Since his studies were the only epidemiological evidence supporting an association between exposure to phenoxy herbicides and an increased incidence of soft tissue sarcoma and malignant lymphoma the Commission examined this very closely.

This involved not only examination of the background of his research and the widespread publicity he had received but also careful analysis of his data case by case, and of his methods.

Dr Hardell was totally co-operative. In San Francisco he spent hours in conference with Counsel Assisting and freely submitted himself to courteous but searching questioning by Counsel Assisting, Counsel for Monsanto and Counsel for the Veterans.

In the result the Commission found the following criticisms of his work to be substantially made out:

- (1) The inclusion of the data which generated the hypotheses which the studies were designed to test;

(ii) Information bias as a result of:

(a) selective recall by the cases because of the prevailing publicity and other factors including a preliminary phone call from Dr Hardell;

(b) a difference in the completeness of the histories of exposure of cases when compared with those of controls;

(c) interviewer bias arising out of the fact that the interviewers knew the purpose of the various studies;

(iii) Inadequate, unsatisfactory and inaccurate exposure data;

(iv) Methodological problems arising from:

(a) the inadequacy of the instructions for the telephone interviewer;

(b) the form of the questionnaires which required only "yes" or "no" answers and gave no opportunity for a "don't know" reply or for explanations;

(c) the linking by the results of 12 different histological types of sarcoma with exposure - an improbable situation.

(vi) the presence of confounding variables for which adjustment could not, on the available data, be made.

The Commission felt that the studies were contrary to a body of soundly based opinion and the results of a number of well conducted studies. The results of Hardell's studies have not been replicated. Accordingly, the Commission did not accept the Hardell studies as proving, on the balance of probabilities, any causal association between Soft Tissue Sarcoma and Lymphoma and exposure to 2,4,-D, 2,4,5-T and TCDD.

Of this section of the Report the great British epidemiologist Sir Richard Doll, wrote to the Commissioner, "Your review of Hardell's work with the additional evidence obtained directly from him at interview showed many of his published statements were exaggerated or not supportable and that there were many opportunities for bias to have been introduced in the collection of his data. His claims cannot be sustained and in my opinion his work should no longer be cited as scientific evidence. It is clear from your review of the published evidence of 2,4-D and 2,4,5-T (the phenoxy herbicides in question) that there is no reason to suppose that they are carcinogenic in laboratory animals..."

* In a personal letter

The US Air Force made the source data of Dr Lathrop and others at San Antonio freely available and Dr Lathrop himself for questioning by both Counsel and scientific consultants for assessment of the Ranch Hand Studies.²²

The Centre for Disease Control made Dr Eriksson and his team available in Atlanta for analysis of the Birth Defects Study.²³

In Australia Dr John Donovan was searchingly questioned particularly by Counsel for the Veterans but as well by Counsel Assisting, as to the Australian Birth Defects Study.²⁴

In every case the quality of the science was pointed up by the investigatory process. A particularly interesting example of the way in which flawed science can find its way into the media and become conventional wisdom is provided by the Addendum to Volume 3, which I have made an annexure to my paper. So effective was the forensic process that the authors of report to the Commission (leaked to the press and widely publicised as valid) sought to withdraw it rather than have its content evaluated. I commend a reading of the unmasking of a piece of pseudo-science as an example of the mode of operation of the Commission.

FINDINGS

In a nutshell the Commission found:

As To Exposure.

1. Contrary to popular belief only a very small number of Australians, perhaps 18-30 were actually directly sprayed with Agent Orange or other colour coded herbicides.
2. The Commission concluded that the exposure of Australians to chemical agents did not produce dosage levels likely to cause long term health effects.
3. Toxic doses of the most poisonous ingredient of Agent Orange (TCDD) almost invariably causes a skin condition called chloracne.
4. No Australian suffered chloracne.

As to Health Effects Generally.

1. Vietnam Veterans are significantly more healthy than Australian males of their age.
2. They are slightly more likely than their National service peers who did not go to Vietnam, to suffer cardiovascular

disease and digestive disease, and to indulge in risk taking behaviour.

As to Mental Well Being,

1. There have been mental well-being casualties amongst veterans of all wars.
2. Homer describes the symptoms of the ancient Greek hero Ulysses in terms very similar to descriptions of those in 20th Century veterans.
3. After World War I the syndrome was called "shell-shock".
4. After World War II it was called "psycho" or "troppo".
5. The group of symptoms suffered by some Vietnam veterans includes:

Flashbacks to terrifying events;

nightmares;

irritability;

rage reaction;

dizzy spells;

anxiety;

insomnia;

depression;

guilt feelings;
headaches;
low back pain;
ulcer;
migraine;
irritable bowel syndrome;
irritable colon;
hypertension;
paranoia;
suspicion;
crowd phobia;
alcoholism.

6. This syndrome or group of symptoms (few suffer all of them, there is usually a cluster however), has been closely observed in veterans of WW I, WW II, Korea, Malaya, and the veterans of both sides of the middle eastern wars.
7. It is not caused by the chemicals used in Vietnam.
8. It is caused by stress.
9. The Vietnam War was particularly stressful for its veterans because:
 - (a) It was a guerilla war without lines;

- (b) The enemy was hard to identify;
- (c) There was no relief from stress because any Vietnamese could be an enemy;
- (d) Women and children were combatants and had to be killed at times;
- (e) Australia did not win;
- (f) There was no welcome home: veterans were often shunned rather than regarded as heroes;
- (g) No one wanted to listen to talk about the war;
- (h) It produced a sense of waste, futility and guilt.

10. The same set of symptoms is often seen in survivors of natural and other disasters (earthquakes, floods, car accidents, etc).

11. It is now called Post Traumatic Stress Disorder.

12. No one needs to feel any shame or guilt about this normal response.

As to Mortality.

1. Vietnam veterans are dying significantly more slowly than other Australians (83%).
2. They are probably dying slightly faster than National Servicemen who served in the army but who did not go to Vietnam.
3. The excess (if it exists) is not caused by chemical agents.
4. It is probably caused by an increase in risk-taking behaviour, and in smoking and in drinking connected with Vietnam service, or perhaps with methods of selection for Vietnam service.
5. Suicide rates amongst veterans are lower than for Australian males of the same age (about 94%).
6. Cancer rates amongst veterans are no higher than for Australian males of the same age (about 99%).
7. There is no statistically significant excess of suicides or cancer by comparison with the non-veteran national service group although a small excess of suicides by comparison with that group cannot be excluded.

As to Birth Defects,

1. It was alleged that exposure to Agent Orange or other chemical agents in Vietnam had resulted in birth anomalies amongst the offspring of Vietnam veterans.
2. Between 3% and 10% of all babies are born with some defect, the accurate percentage depending on what you count and when you count it. For example a minor defect, an extra nipple, is often not discovered until puberty.
3. A study was done of more than 8500 infants with birth defects, carefully matched with the same number of controls. The babies with birth defects were no more likely to have a Vietnam veteran for a father than the healthy babies.
4. No association between length or year of service and birth defects was found (which you would expect if chemical agents were to blame, when the same agents were not used in all years or times of years).
5. No excess of birth defects or other untoward outcomes were found amongst the US group most heavily exposed to Agent Orange, the Ranch Handers themselves.

6. No excess of birth defects or other untoward outcomes were found in a major study comparing Vietnam veterans with non veterans in Atlanta Georgia, USA (The CDC Study).
7. No reliable study shows any association between exposure of the father to chemicals and untoward birth outcomes.
8. Biologically such an association is highly implausible and has never been established.
9. The hypothesis that exposure of fathers to chemicals in Vietnam caused birth defects in children conceived in Australia is fanciful.

THE CLASS ACTION

If there is no connection between unfavourable outcome and exposure to Agent Orange, why did the chemical companies pay US\$180M?

First let us examine the sum: 2.5 million Americans were technically eligible members of the class not counting children of veterans. The settlement represents less than \$90 each. To the chemical companies it represented an end to the litigation and to continuing legal costs which already outweighed the settlement sum. A commercial decision rather than an admission of liability.

During legal argument as to the fairness of the settlement Judge Weinstein said to Australian Counsel who submitted that the settlement was too small, "\$180 million, \$360 million, \$720 million they are all a lot bigger than zero Mr Lonnie".

He found that evidence of causal connection between Agent Orange Exposure and any ill health of veterans was lacking and that the settlement was manifestly inadequate if such evidence had been available. After lengthy evidence and inquiry he approved the settlement because he was satisfied that such evidence was not available.

ARE THE FINDINGS RIGHT?

They coincide with those of a Supreme Court Judge of Nova Scotia who tried a similar issue.²⁵ Broadly speaking, a group of environmentalists brought action in Sydney, Nova Scotia before Mr Justice Nunn for an injunction restraining the use of phenoxy herbicides by the defendant. The trial Judge came to the conclusion that no injunction was warranted. In giving his reasons for judgment he made the following findings:

"591 I am satisfied that the overwhelming currently accepted view of responsible scientists is that there is little evidence that, for humans either 2,4-D or 2,4,5-T is mutagenic or carcinogenic and that TCDD is not an effective carcinogen, and further, that there are no-effect levels and

safe levels for humans and wildlife for each of these substances.

593 Having reached this point it is appropriate to add that the evidence of risk assessments clearly indicates that any risk here in Nova Scotia, if, indeed, there is a risk at all, is infinitesimally small and many, many times less than one in a million which level, apparently, is regarded as a safe and acceptable risk by most of the world's regulatory agencies. Putting this in perspective, as indicated by Dr Wilson in his evidence, the risk of cancer to a smoker is 1 in 800 and for a non-smoker continuously in the same room with smokers it is 1 in 100,000, while the risk to a person drinking two litres of water per day from a stream immediately after being sprayed (which will not happen with buffer zones) is 1 in 100,000 million or which itself is regarded as a 'de minimus' risk."

Judge Weinstein in one of the Class Actions in the USA said, as to birth defects, "Plaintiffs have produced no evidence of any probative value to contradict the Government's overwhelming showing of no present proof of causation" (emphasis added).²⁶ In a motion for summary Judgment by the US Government and other defendants in respect of those plaintiffs who had elected to opt out of the Class settlement, the Judge described the claim as "unarguably hopeless".

The Australian AVHS Birth Defects and Mortality Studies are to the same effect as the US studies.

The major study of the most exposed Americans, the Ranch Handers, who conducted the spraying reached the same conclusions as Evatt J.27

The Centre for Disease Control in Atlanta Georgia studied the birth outcomes of Vietnam veterans and controls. Their results confirm Evatt J's findings.28

HOW COULD IT HAPPEN?

If the findings are right, and I am confident that they are, how did it happen?

The development of the Agent Orange story should be contrasted with that of the normal epidemiological process. Epidemiological progress is often made by the observation of a particular syndrome or set of symptoms and signs associated with a particular exposure leading to deduction by a trained observer of an hypothesis of a cause and effect to be tested by proper scientific inquiry. It involves a deductive leap from a large number of particular cases to an hypothesis for testing.

The Agent Orange story was this process in reverse. One man ascribed his cancer to being sprayed with Agent Orange. Others then ascribed a huge range of other disabilities to the same cause because of a wish to believe, not by an observation of value.

In June 1977 one Maude de Victor, a counsellor employed in the Chicago Office of Veterans' Administration (US) received a telephone call from the wife of Charles Owen. Owen and his wife were convinced that his cancer had been caused by a chemical which he sprayed in Vietnam. He had been a member of the US Airforce for about 24 years. Shortly after his contact with Ms de Victor, Owen died.

Ms de Victor, herself a cancer sufferer in remission, pursued Mrs Owen's claims to appeal following Owen's death and the initial refusal of a pension.

She "called up" information from a computer terminal about cancer victims who had served in Vietnam. She found what seemed to her to be a large number of cancers. She also closely questioned veterans seeking assistance about their herbicide exposure. Between June and October 1977 she became convinced not only that Owen was correct about the cause of his cancer but also that Agent Orange caused a wide variety of disabilities amongst Vietnam veterans and she prompted such veterans to file claims for compensaion, the first in October 1977. Her "calling up"29

of cancer cases was noticed by her superiors and since she was neither medically nor in any other way qualified to look at individual files for general or research purposes her order for the files was cancelled. This she took as evidence of a cover up and she began a personal crusade.³⁰ The Veterans' Administration responded, predictably enough, by requiring medical support for the veterans' claims.

Maude de Victor approached the local television channel and over the next few months Bill Kurtis put together a documentary called, "Agent Orange - Vietnam's Deadly Fog", first played in Chicago on 23 March 1978 and thereafter receiving national coverage. The program was a masterpiece. Every Australian who watches television has seen extracts from it. Portions of it were used in the lead in to The National Television News on the evening of the tabling of the Evatt Report. Its mixture of truth, half truth, falsehood and innuendo all in an explosive emotional mix must, it seems, be credited, (if that is the right word), with much of what flowed thereafter. The first human example used in the film was that of James Simmonds. It is clear from the film that Simmonds was prompted by de Victor both into remembering that he was exposed to herbicides and also into ascribing his symptoms to that exposure. She gathered together the group who appeared in the program.

The documentary concentrated its attention on birth defects, cancer and a general malady involving non-specific symptoms but

including in many cases fatigue, loss of libido, anxiety, tingling of the extremities and "just not feeling well". As to the first, the program failed to mention that there is no established case in either human beings or animals where exposure of the father to chemicals has led to deformities in children. The scientists shown on the program are talking about birth deformities in monkeys, rats and mice which occurred after heavy dosing of the mothers in early pregnancy. The program makes a quantum leap from massive doses in pregnant females to minuscule doses in fathers long before conception.

That extrapolation from animal data to human beings is never more than indicative and notoriously unreliable is not even mentioned.

As well most cancer victims have an urge to seek out causes for their disease. The program refers to tumours in rats and mice but fails to mention the then 30 years of uneventful use of the components of Agent Orange in agriculture world wide, including use by farmers world wide, public authorities and a very large number of ordinary gardeners.

The conclusions of the National Academy of Sciences Report are omitted and instead rumours about the illnesses of mountain people unvisited by its Committee members, birth defect rates lower than those of comfortable western cities are described as "high incidence" and unverified claims of liver cancer being connected with Agent Orange are emphasised. The Commission found

that for scientists to make such public statements was irresponsible. As scientists, they must have known that to extrapolate from the pregnant mice and monkey data to the exposure of potential fathers to spray, and to predict birth defects in the context was totally unscientific. It was particularly irresponsible because of the notorious anxiety of those who parent birth-defected children to ascribe some external cause to the defect.

It must also be borne in mind that even in sophisticated communities the bearing of a defective child is a matter for some shame. Educated middle-class parents simply don't talk about the child who was born with six toes or with a supernumerary nipple or with a cleft palate which could be corrected. No-one has defective babies. In more primitive societies, infanticide and birth concealment are still common when defected children are born.

On the other hand, where a group of people have a reason to concentrate upon birth defects or have a common reason for wishing to assign those defects to a particular cause, they are very inclined to talk about them amongst those in the group. As far as the Australian contingent is concerned, if one assumes that it was 50,000 strong and all male, statistics would indicate they they would father of the order of 100,000 children. One would expect to find amongst these children at least 2,000 or 3,000 with serious abnormalities. In a context where such

matters are usually not even mentioned, such a number when well publicised could indeed look like an epidemic.

So successful was the Kurtis film that the US National press took up the cry and a veritable flood of Agent Orange claims produced a predictable reaction from the Veterans' Administration (VA) in the United States.

The concern of the press, of veterans and of Congressmen has continued to the present day. Studies contradicting the Agent Orange theory have received little publicity and when publicity is received it is almost invariably put beside outraged cries of "white-wash" from individual veterans or pseudo-scientists with an axe to grind.

In Australia no claim of herbicide or other chemical related disability was received by the Department of Veterans' Affairs, Australian, prior to January 1979.

Meanwhile in the United States, a helicopter crew member, Paul Reutershan, becoming convinced by Maude de Victor that his cancer was linked to the spray into which he had flown in Vietnam retained Attorney Edward Gorman of O'Hagan, Reilly and Gorman, who filed a claim for damages for him in New York. Gorman was not experienced in that field of civil litigation known as "toxic torts". The specialist in litigation against the manufacturers and distributors of chemical substances was Victor Yannacone, who

had as early as 1966 conducted litigation leading to the banning in Suffolk County of DDT. The prominent Long Island Attorney was consulted by Gorman.

After Reutershan's death on 14 February 1978 his friend and fellow Vietnam veterans, Frank McCarthy, contacted Yannacone and urged him to pursue the case on behalf of all Vietnam veterans. McCarthy had formed a group called "Agent Orange Victims International" and as the publicity increased, so also did calls received by this group. Yannacone rewrote the pleadings in Reutershan's case as a "Class Action Complaint" and thereafter travelled the United States with McCarthy.

As tape recordings of his speeches reveal, Yannacone is a powerful public orator. To lawyers trained in the Australian system, his performances are nothing short of incredible. In tones reminiscent of a southern revivalist, he reeled off lists of symptoms ranging from tingling toes to headaches and told Vietnam veterans that they were symptoms of "Agent Orange sickness." By his evangelism at many public meetings, he not only gained many clients but also spread fear of toxic reaction and birth deformity far and wide.

The media quoted him, McCarthy, Kurtis and anyone else who would say something sensational.

The Magazine, "Rolling Stone"³¹ and later the National media brought the myth to Australia. VVAA was founded in 1979 for the sole purpose of pushing the Agent Orange barrow. One of its founders, Bernard Zapiel, said to the Press, "I read the US newspapers and knew that I had Agent Orange sickness".³² Significantly his (later) Repatriation benefit claim never mentioned chemical caused illness.

How the myth became something "everyone knew was true" is disclosed by the headlines:

"AGENT ORANGE GOT ME SAYS VIETNAM VETERAN"

"SOLDIERS' BABIES DEATH AT BIRTH"

"AGENT ORANGE FATHER AN ANGRY MAN"

"AGENT ORANGE RUINED MY LIFE"

"THE AGENT ORANGE HORROR"

"LIFE HELL FOR AGENT ORANGE VICTIM"

"SPRAYING TO KILL"

"SHOCK REPORT ON AGENT ORANGE BABIES"

"ORANGE FOR DANGER, THE DEADLY JOKE"

"AGENT ORANGE CAUSE DEFORMITY"

"VETERANS TELL OF ILLNESS AND DEFORMITY"

"THE AGENT CALLED HADES"

"AGENT ORANGE VETERAN FACES LIFE OF AGONY"

"AGENTS OF DEFOMITY AND DEATH"³³

A RIPOSTE

The Report has been criticised for the firmness of its conclusions. How can you be so sure ask those who have read only the summary.

One answer is because the Commissioner can count. For example, as to cancer Dr Marvin Schneidermann came from the United States for VVAA to postulate by extrapolation from animal data a maximum increase in the life time risk of cancer of 1×10^{-6} , from a life-time daily dose of 10 nanograms per kilogram body weight of TCDD, the most toxic ingredient of Agent Orange. This predicts 1/20th of an extra case from the cohort of 50,000. There was no evidence that any Australian received dosage remotely approaching this level, let alone daily for a lifetime.

As to Birth Defects, a major and highly regarded Australian Study shows no increase in risk in veterans offspring. This is consistent with 2 major US studies of veterans offspring including a study of the most exposed, the Ranch Handers. The effect cannot be produced by exposing male animals. The male mediated response has never been shown. Most convincing of all was the evidence of experts as to biological implausibility of the effect. For example sperm production is continuous and contaminated sperm would remain in the system of a young healthy male for 90 days at the most. The suggestion of a teratogenic effect through intercourse months or years later was frankly nonsense.

It has also been said that the time since Vietnam is too short - that latency periods preclude a negative conclusion about cancer.

The point about latency period of course has some validity. However the claim which the Commission was asked to investigate was that there was (already) a vast increase in cancers amongst Vietnam veterans. There is not.³⁴

Further, sprayers and other handlers of the ingredients of Agent Orange, 2,4-D and 2,4,5-T were investigated in depth. Those undoubtedly exposed and over periods of 30-40 years had cancer rates within normal ranges.³⁵

The latency period factor does not undermine the Commission's conclusions.

Firmness of conclusion was not only indicated by the social environment, it was correct. The Commission perceived that cautious understatement by responsible scientists had left the field open to the less scrupulous. Lawyers call a finding of "not proven" in a clear case a resort to the "Coward's Castle" of the onus of proof. His Honour rejected cautious understatement as a strategy and eschewed the Coward's Castle. He made a robust finding completely justified by the evidence and on the proper standard of proof. For those who have clearly not read the Report, let alone the evidence to cry "not proven yet", only

established that they have been duped into believing that only a guilty finding is OK.

Some criticism of the Commissioner himself has emerged. I think I should say that he is a big man in every sense. His intelligence and command of this vast and complex topic were remarked upon wherever we went. His objectivity and the openness of his mind were maintained until the pen was finally put down, at about 2am on the 31st of July.

His compassion, his scholarship and his integrity are beyond question. I will embarrass him I know, but I must say publicly how proud I am to have been associated with him and his work.

He is a great leader and a great Judge. I hope that this august Forum will congratulate him on his work. He has already received, perhaps, the ultimate accolade. Sir Richard Doll wrote of the Cancer Volume:

"I am sorry only that your review has had to be published in book form and not in a scientific journal as books are so much less readily available to scientists. I am sure however, that it will be widely quoted and it will come to be regarded as definitive work on the subject".

All fairminded critics who read the whole report will agree.

FOOTNOTES

1. Hanser Guide to Decision: The Royal Commission (1965) Preface IX.
2. Todd's Parliamentary Government in England by Spencer Walpole quoted in WA Parliament debate 3/12/47, 2345,46 (1979).
3. (1979) 94 DLR 365 at 370.
4. 8 ALR 691 at 699.
5. Sir Charles Lowe, The Commissioner, Royal Commission 24 ALJ 386, 387.
6. cf eg Queen's Memorial Infectious Diseases Hospital Inquiry (1913) Report 3, The Gas Board Inquiry (1912) Report, V).
7. cf The Beach Police Inquiry (1975) Transcript p 71/72.
8. Gt Britain, "Documentary Evidence Received by the Royal Commission on Tribunals of Inquiry".
9. Senate Select Committee on Science and the Environment. Pesticides and the Health of Vietnam Veterans.
10. 1976 Fontana Paperbacks, Sir Karl Popper, William Collins, London.
11. See The Bread Industry Commission Report 1949, pp 5-6.
12. Hallett, L R. Royal Commissions and Boards of Enquiry, Some Legal and Procedural Aspects, The Law Book Company Limited, Sydney, 1982, p 164.
13. Wigmore, "Treatise on the Law of Evidence" 2nd Ed. (1923) Vol 5, Section 2498.
14. Briginshaw v Briginshaw (1938) 60 CLR 336 at 361.
15. *ibid*, at p 362
16. See s. 47 of the Repatriation Act 1920, as amended in 1977.
17. The Repatriation Commission v. Law (1981) 174 CLR 635 per Murphy J. at p 640.
18. O'Brien's case (*supra*) per Brennan J at p 369.
19. *ibid* per Gibbs CJ, Wilson and Dawson JJ at pp 367.
20. Evans Prof A.S. Causation and Disease 49 Yale J. Biology and Medicine 1976 pp 175-195.

21. Doll and Peto JNCI Vol 66 No. 6 June 1981 pp 1193-1308.
22. See footnote 27.
23. Eriksson et al 1984
24. Donovan et al 1983.
25. Palmer et al v Nova Scotia Forest Industry 60 N.S.R. (2d) 271.
26. Ford v United States CV-79-747.
27. Ranch Hand I & II, US Mortality Study Report and US Air Force, An Epidemiological Investigation of Health Effects in Air Force Personnel After Exposure to Herbicides - Baseline Morbidity 24/2/84.
28. Eriksson et al, Vietnam Veterans Risks for Fathering Babies with Birth Defects.
29. By which is meant seeking of information from the computer system.
30. Personal Communication to Senior Counsel Assisting, March 1984, Victor Yannacone.
31. August 1978 "The Poison Harvest: Agent Orange, A Vietnam Legacy" by Edward Kohn.
32. Heidelberg "Voice" 25.4.79.
33. Report Chapter I, p 47.
34. cf footnote 27 and Greenwald et al 1985, Kogan et al 1985.
35. Victorian Sprayers, Department of Conservation 1985, Smith et al (New Zealand Applicators) 1982-83.