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**Description Notes** Item includes a cover memo from K. A. Watson at Dow Chemical (Australia) Limited, and a routing slip from Alvin Young to Peter Kahn.

# ROUTING AND TRANSMITTAL SLIP

Date

11 May 1981  
11 May 81

<b>TO:</b> (Name, office symbol, room number, building, Agency/Post)	Initials	Date
1. <del>                    </del>		
2. Mr Peter Kahn		
3. 7 Elizabeth Avenue		
4. East Brunswick, NJ 08816		
5.		

Action	File	Note and Return
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**REMARKS**

Dear Peter: Per our conversation of 5 May at the Veterans Administration, attached please find a copy of the ABC radio interview on Agent Orange originating from Australia. Although they listed you as "peter Carne", Dow Chemical identified it as "Peter Kahn", a biochemist from NJ.

I enjoyed meeting you and I look forward to working with you in the future.

Sincerely,

AL YOUNG

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**OPTIONAL FORM 41 (Rev. 7-76)**  
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DOW CHEMICAL (AUSTRALIA) LIMITED

3RD FLOOR. M.L.C. BUILDING. NORTH SYDNEY

TELEX: AA20442  
TELEPHONE: 929-8433  
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P.O. BOX 384  
NORTH SYDNEY, N.S.W. 2060

January 23, 1980

B.A. SCHEWTZ - 1803 Bldg MIDLAND  
J.H. DAVIDSON - 9001 Bldg MIDLAND  
cc: M.J. BLANKENSHIP - Altona  
G.R. WEATE - Sydney

SUBJECT: DR. W. McBRIDE

Attached is a transcript of an interview given by Dr. William McBride on ABC radio. The text gives some idea of McBride's thinking on the subject of Agent Orange and TCDD which could be useful when you meet him next month.

Regards,

K.A. WATSON

Attach:  
bs

P. C. KATHI, MD  
Biochemist and President  
Antigen University  
the water in some cases it  
at Antigen.  
Participation in various  
national meetings...



CITY EXTRA - JAN 9, 1980

To discuss the medical aspect of the possible harmful effects of Agent Orange I have on the line Dr. William McBride, founder of Foundation 41. The Australian doctor who told the world of the effects of thalidomide and who now devotes his working life to the health of children in the first 41 weeks of their life.

C.E. speaks firstly to American biochemist before speaking to Dr. McBride.

Dr. Peter Carne, a biochemist from Rutger's University in New Jersey speaks to Margaret McKay and is asked how long has he been involved in evaluating the herbicides used in the Vietnam war:

Carne 'During the Vietnam war, beginning about 1968, perhaps 1969, I accumulated all the literature that existed up until that time and then I left that area until about a year ago, and when at the request of veterans groups in New Jersey, where I live and work, I was asked to go out and speak to a number of groups because of their fears that the exposure to the defoliants was affecting them. And they wanted to know what was the state of Dow Chemical with medical evidence on it; and at that time I began to review the literature that had come out since 1970. I've worked my way back now through 1975 or so in the literature, and on the basis of that, I went out to various veteran groups to tell them what the state of the report was'.

C.E. 'What was some of the worries, or some of the questions of the American veterans'.

Carne 'There were two kinds. One is that a considerable number of them have low grade chronic symptoms; nervousness, fatigue, dizziness and inability to concentrate. Sometimes their ill-tempered for reasons that they don't understand and they were not ill-tempered before they went to Vietnam. A great many complain of these and often there will be no two people having exactly the same set of symptoms but they are a form of a related constellation. The other kind of

thing is that some of them have fathered deformed children and we're afraid that there may be a connection between that and the exposure to defoliants in Vietnam'.

C.E. 'Could you tell us exactly what Agent Orange is?'

Carne 'It's an equal mixture of two compounds which are usually designated 2,4-D and 2,4,5-T and they have very long names and you'll find them in organic chemical literature. The problem doesn't arise from the defoliants themselves but from the contaminant, usually called dioxin present in the manufacture, primarily of the 2,4,5-T. The material used in Vietnam had dioxin contamination of rather high levels'.

C.E. 'What sort of results have occurred in laboratory tests with dioxin'.

Carne 'Its terribly, terribly toxic in minute quantities. In fact one of the problems is being able to analyse the material at the low levels at which toxic effects are found. Of course in a laboratory study where you start with a bottle of dioxin on the shelf, for example, you can make up any concentration you wish and you know the concentration because you diluted the concentrated stock. In the case of animals collected in the rivers or analysing the human tissue; your analysing there in a very different situation, where the material may be toxic at an extremely low level, in fact it is, but its below the level of detection of most analytical instruments. There are only a few laboratories, perhaps half a dozen in the world, that are capable of analysing at the extremely low levels that are necessary. Its very hard to track it down'.

C.E. 'It is a very costly venture as well?.'

Carne 'Typically between \$500 and \$1,000 a shot for an analysis'

C.E. 'If we were going to examine the veterans in the United States and in Australia that would come into a great deal of money?'

Carne 'You certainly would not do that type of examination'.

C.E. 'You couldn't?.'

Carne 'No, that would be out of the question'.

C.E. 'Could dioxin be detected in veterans who, for example, were in Vietnam ten or eleven years ago?'

Carne 'Probably not. I think that the nature of work there would be quite different. I think the analytical question there is so hard that it can't even be attempted. I think what ought to be done with the veterans is a statistical survey. I would call on every veteran who has served in Vietnam, even a significant number who did not serve but were in the military at that time. I would call them in for medical examination and a questionnaire on the medical consequences in their families. And you really have a very large number of men brought in because of the nature of the evidence you would have to seek is statistical advice for nature. And you would have to have at least two groups - those who are known to be exposed to the defoliant by having been in sprayed areas, and those who are known not to have been exposed. And only by comparing two groups of that kind, and large ones at that, could you assemble sufficient statistical evidence to make a case one way or the other'.

C.E. 'From your contact with the American veterans, is there enough statistical evidence to link any of the deformities or ill-health with Agent Orange or with any of the herbicides used in Vietnam?'

Carne 'Firm statistical evidence, no. There is a great deal of suggestive and circumstantial evidence collected. But you have to understand the nature of scientific proof, its suggestive at the moment and its not conclusive. It certainly makes me very suspicious'.

C.E. 'Well statistical evidence, you mean for example in the case of smoking and cancer, is that purely statistical evidence. And that's beyond doubt?'

Carne 'Yes that's beyond doubt, and right now the statistical evidence, in the case of Agent Orange, is simply not enough to make a critical evaluation'.

C.E. 'Could that be because not enough have come forward, not enough veterans have come forward? So we have yet to see the full extent of the damage of Agent Orange?'

Carne 'Yes, I think that's the case'.

C.E. 'The other herbicides used in Vietnam. How many were there'.

Carne 'There were three principal ones that were used. There was Agent Orange which was by far the most heavily used. There were two others; Agent Blue and Agent White. The names arise from the coloured bands which were painted on the drums in which the material was shipped; and one of the others, its active ingredient was an organic arsenical compound. Containing arsenic. Its not the arsenic poison, in fact, its not even very toxic. It was used primarily against grasses, heavily against rice'.

C.E. 'Could that have accidentally been sprayed on friendly troops?'

Carne 'Yes, it certainly could have. I don't think it would have the damaging consequences of dioxin that's found in 2,4,5-T. For one thing it contains no dioxin'.

C.E. 'So there wouldn't be any genetic problems with it'.

Carne 'No there wouldn't be any problems of that kind'.

C.E. 'To establish any direct link between Agent Orange and genetic defects, as you say would be purely statistical, is that not enough, is that not sufficient'.

Carne 'Certainly with regard to health benefits for veterans, yes that would be sufficient; and as far as establishing that it can cause genetic abnormalities the biochemical work is not very difficult'.

C.E. 'Laboratory tests with dioxin, what sort of deformities occurred in rats for example'.

Carne 'Cleft palate, kidney abnormalities, deformities of the limbs. All these are the same kind of things that are being found in children'.

C.E. 'Is that still circumstantial evidence, or could that said to be statistical evidence?'

Carne 'That is straight biochemical evidence. The stuff is administered and the consequences are found. There is no question of abnormality there. Those are carefully controlled studies. The difficulty is that the material is administered to female rats who are in pregnancy. We are working with primates now and there are definite chronic effects of low levels of dioxin on both male and female animals and there are definite effects on reproductive capacity of the females. The problem is that the administration of the drug in the laboratory tests done so far has been to females. Whereas it is the men who are exposed in Vietnam and the question then is what do they transmit in their germ cells. That's more difficult to pin down, and those studies haven't been done'.

C.E. 'Exposure seems to be a matter of concern in that 2,4,5-T and 2,4-D was used in the United States as a herbicide. Can it be proven that the exposure of the veterans wasn't to various herbicides used in the United States as opposed to, in its form in Agent Orange in Vietnam?'

Carne 'Yes, this<sup>is</sup> if statistical work is properly done that can be controlled out because that, in fact, would effect both groups. Those who were exposed in Vietnam and those who weren't. I think that factor could be controlled out relatively easily. I'm very

suspicious that there is a connection. I'd be surprised if there weren't, based on what I've seen so far'.

C.E. 'And how will you pursue that when you get back to the States'

Carne 'The state government of New Jersey is putting together an investigative commission to look into the effects of defoliant chemicals on Vietnam veterans and the related chemicals on anybody else, because of a great many similar chemicals that are used in the petrochemical industry nearby. The State commission is not yet formed, when it is formed I would offer any help that it will ask. I believe that it is the first such commission of any kind in the United States'.

C.E. 'Is there anything that you would like to add?'

Carne 'I oppose the use of these chemicals in warfare. But that's a completely separate issue. I think the worst problem for the veterans is the uncertainty. They don't know and often the man goes to the Veteran's Administration for medical help with the few symptoms that are hard to pin down to any specific organic cause right now, and they send him to a psychiatrist because they can't find an immediate organic cause. Why pan him out and tell him that he has some sort of a character defect or that he is a malingerer and that may not be the truth. Its demoralising to a man to be sent out with that kind of uncertainty thinking there is something wrong with his head and there may very well not be'.

C.E. now speaks to Dr. W. McBride

'Dr. McBride, is there any point made by Dr. Carne with which you perhaps disagree or which you want to pursue immediately?'

McBride 'No. I thought Dr. Carne spoke very well and I think we could elaborate on some of the problems. I agree the only way you can tackle this is a statistical study. I have a friend who is working with dioxins in the United States. It is very toxic and it does produce deformities in animals.

Now say 50,000 Australian's served in Vietnam (C.E. states 70,000). O.K. forget about Vietnam now. 50,000 young Australian's got married this year, 50,000 couples, and they all decided to try and have a family. 5,000 or 10% would have great difficulty in getting pregnant, 45,000 would get pregnant, say within 18 months. Now, from our knowledge of birth defects, 1,200 babies born of that 45,000 or 3% would have some or quite severe physical abnormalities. So this is the problem, you've got to find that if the incidence of deformities is higher amongst veterans from Vietnam than say 3%, then perhaps you might get a pattern. Now we know from our statistical studies, over the years, that the commonest congenital abnormality is congenital heart disease and they run down, we've got the twelve most common listed from there; that's almost 1%. So one in every 100 babies would have congenital heart disease. So if there is any specific higher incidence than our tables, say of cleft palate which was mentioned, then we could see there was a higher incidence of cleft palate among offspring of Vietnam veterans. So this is the situation. You would have to do a statistical study. Now to my knowledge, it has not been shown that dioxin affects genes. Now any drug that you take or anyone takes, for instance an aspirin; its got what we call half life, within two hours half the amount you've taken has been excreted by the body. Now some of the chemicals with the longest half life are the heavy metals such as lead or gold, things like that which last three months. Now for dioxin to still be acting after many years in a veteran would have to have a very long half life, or the only other way it could produce an effect would be to effect the genetic constitution of the germ cells in the testes. This has not been shown to occur. So you have to have a statistical study to see if the incidence of deformities is higher in the offspring of Vietnam veterans. Not one of us could say that we are going to have a normal healthy child, no matter who you are or what you've done in the past. So there is an incidence of deformities for reasons for which we do not know, some are genetic and some are environmental contaminants. Now as to the effects on the veteran himself I'm not going to comment on those because we know dioxin

does cause skin conditions and it could produce other things, I'm not confident to comment there. I think that the birth defects are very vague at present. I know there is going to be a study, set up by the Australian government. But it would be a fairly slow process and on first principles it would surprise me if Agent Orange does produce birth defects!.

C.E. 'It would surprise you if it does produce birth defects or would it surprise you if the scientific evidence can be marshalled to show that it is so'.

McBride 'No, it would surprise me that it does. I could see the difference if it were the pregnant women in Vietnam who were sprayed with it, that's different, because they are pregnant and its an environmental chemical. But to effect the germ cells of the testes to produce genetic changes is unlikely. I'm not saying its not possible, but I'm saying on the evidence we have of studies we've carried out, I think its unlikely'.

C.E. 'Dr. McBride I thought one of the points Carne made was that in the tests on rats the dioxin was seen to have genetic effects which could continue for generations. Did I misunderstand that?'

McBride 'You misunderstood that, yes. I've certainly seen no report that dioxin has been proven to produce genetic changes. Now radiation, certainly, but I haven't seen any evidence of dioxin causing changes'.

C.E. 'Now the other point arising, surely is, that if we had access to the Vietnamese records we may well find some interesting occurrences there because in the late sixties, if I remember properly, there were bitter complaints of birth defects in the Vietnamese population, whether or not they were properly documented, they were certainly mentioned. And there was some concern, presumably in war time and with the shifting population and with all the disruption they had, maybe those records would no longer be accessible'.

McBride 'As I said, that's different; that's exposure to pregnant women and that's an environmental contaminant. Now I could believe very likely that this Agent Orange was fairly impure, its not like commercial 2,4-D or 2,4,5-T, it was pretty impure, so it had a fairly high content of dioxin. Now exposure to a pregnant woman is quite different, that's an environmental contaminant and I wouldn't be at all surprised if it did cause birth defects amongst the population of the war area. But its a different matter to say that it effects the genes of the germ cells of the male testes'.

C.E. 'But do we know it was the environmental affect on the women in that situation rather than those fathers of these Vietnamese children?'

McBride 'Well you don't. You've got me there. You don't know but its more likely to be that if a woman is pregnant and she inhales the stuff that's been sprayed around, or takes it in the food or drinking water it would go straight across to the foetus'.

C.E. 'But the authorities here don't even recognise that yet do they?'

McBride 'I don't know what they acknowledge. I have read these claims, and counter-claims have been made that this is not true, but I can imagine that if dioxin was sprayed around the pregnant women in the war zone that they would more likely to have babies with congenital deformities. But I think that its a different matter to the babies of women who are now married to veterans of the war. We had quite a number of calls to the Foundation yesterday, people who are worried that should they have a baby or should they have another child. We can only say at this stage, yes, they should because today there is no evidence of an increase in incidence of birth defects over the 3%'.  
,

C.E. 'Presumably what you are saying about the environmental impact of dioxin would, you'd think, be sufficient reading to make sure that the 2,4-D and 2,4,5-T were not used again in that situation, I mean the effects on the Vietnamese population alone'.

McBride 'Look I think any war is terrible and I don't like the idea of using defoliants in the war. I think it is a terrible thing to do to a country. Still it was done and I'm not going to go into that. This question has to be considered and I think the government are going to enquiry into this but it will be a slow business. You would have to contact the veterans who are married, who have had children, and see how many incidences of birth defects they have had in their family.

C.E. 'Won't the method used in such a study be similar to the method used in the study of thalidomide and its effects?'

McBride 'Just the same. Only on a bigger scale. You said there were 70,000 so there would be 70,000 questionnaires. But of course this could be done, its not difficult, its just sending out 70,000 letters and I'd imagine the Veteran's Affairs department would know the addresses of these people'.

C.E. 'Then having sent out these questionnaires and getting the answers you believe then it would be possible to establish a result one way or the other?'

McBride 'Definitely yes'.

C.E. 'Because I seem to recall someone saying, was it a Melbourne biochemist yesterday saying that it may never be possible to establish scientifically that there is this cause and effect relationship between the dioxin and the birth defects, but you would believe, in fact, it would be possible'.

McBride 'I know dioxin does produce birth defects in animals, that is well established, it's very toxic; so we know that. Now if you did a survey and found the incidence of birth defects was 5% or that the incidence of congenital heart disease was 2% instead of a 1% of the rest of the population you know there is a higher incidence of birth defects among the offspring of veterans of the Vietnam war. So you could say that, fairly simply, it would take some time to get the replies in but it is not insurmountable'.

C.E. 'Had you thought of any possible connection before this last burst of publicity?'

McBride 'Yes. In 1971 I was at a meeting in Paris when this was very topical, it was debated very fiercely by the American's themselves. There were two factions of American scientists, some thought that the war was still going on and some thought that Agent Orange was causing deformities. Others said that there was no proof. So that this was hotly debated, the meeting almost came to blows. I had never seen anyone in a scientific meeting get so violent. So it has been thought for a long time that this was a possibility but not in the offspring of veterans certainly. Now we take histories of the parents of the children we're studying'.

C.E. 'But that wouldn't be one of the questions would it?'

McBride 'I was just going to say, we certainly don't ask about war service. But you could always find out something you have missed out and we can easily check up on the effects of children by writing to the parents and asking did the husband have war service and if so where'.

C.E. 'One other thing that occurs to me, lets say that the study were done, lets say that it was discovered that there was some higher incidence of defects in the babies of Vietnam veterans, that still wouldn't be enough would it, to say the cause was dioxin. Someone might say, well they ate a very special sort of food which had certain preservatives in it, or whatever. I mean could there be other factors?'

McBride 'Well there could be other factors, certainly'.

C.E. 'Wouldn't that confuse the issue again?'

McBride 'Perhaps slightly but you would know. You then have to work out the chances that there are other complicating factors or dioxin'.

C.E. 'So at the moment it could grow into another thalidomide or it could be laid to rest'.

McBride 'I don't think so. I think that there is a big monitoring centre in Atlanta in the U.S. and they are monitoring birth defects all the time. I think it would have shown up because there are certainly more veterans in the U.S.A. than here and I think people have been aware of this since 1971 and I think that it would have shown up in the monitoring'.

C.E. 'Except that Carne says that the veteran population of the United States hasn't been fully covered statistically.'

McBride 'Yes, but the centres that do the monitoring in the United States are very thorough and they monitor a certain area. The Atlanta one in Georgia I think there would be a lot of veterans in that area, I think there should have been a pickup'.

C.E. 'Any other point at this stage, could we take it any further Dr. McBride, or not at the moment; in your opinion?'

McBride 'No, not at the moment. I think it should be investigated but I don't think there is any undue cause for alarm for Vietnam veterans and their wives, whether they should have their children. I would say on the evidence to-date there is no reason why they shouldn't have children'.

C.E. 'Say a link was proven, what then would we be saying to people about having families in the future'.

McBride 'Well that's a bit like crossing your bridges before you come to them, isn't it? You have to prove that there is a genetic defect and on the evidence and first principle I think it is unlikely'.

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