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San Francisco, California
March 29, 1976

PARAQUAT TOXICOLOGY MEETING
FEBRUARY, 1976
File: 152.31 - Paraquat

MR. J. N. OSPENSON
Chevron Chemical Company

The following is a summary of the meetings held between myself and Ken Fletcher of CTL on February 17 and 18, 1976.

1. Prior to our meeting, PPD had agreed to fund the adsorbent studies, and we have requested samples from you for this project. Our work will include an attempt to determine whether we can reduce the dose of a resin such as Dowex and still promote survival. It is assumed that you will arrange payment by PPD.
2. With regard to the proposed epidemiology study, CTL has asked the Divisional Medical Officer (Dr. Keir Howard) of PPD to see what he can find. Dr. Howard has contacted interested persons in Malaysia, and is pursuing the matter, although no timetable has been set. We anticipate it will take 2-3 more months, just to determine whether an appropriate group exists.
3. We discussed at some length, the gaps in our knowledge of the chronic effects of paraquat exposure. The animal studies available are old and do not meet current standards. Some are poorly done. In fact, the cause of death from chronic exposure to paraquat could not be determined from these studies. Dr. Fletcher agreed to review these and to consider repeating certain of the studies. I have recently received a letter from him (enclosed) in which he states that he has reviewed this area with Allen Calderbank and Arthur Waitt, and they do not believe it warranted to repeat any of this work. I agree with this only if we can do the proposed epidemiology study. If not, our only recourse will be to have good animal studies in this area.
4. Dr. Fletcher has asked Dr. J. H. Sanderson, a hematologist at CTL, to look into the question of the effects of paraquat on blood and the blood-forming organs. Two communications from Dr. Sanderson are attached. I agree with his feelings on Musti's paper, but find more difficulty with that of Lautenschlager. I intend to encourage Dr. Sanderson's research in this area. We are going to undertake to review all U.S. cases of paraquat poisoning in order to determine whether any hematologic effects occur.

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- 5) Dr. Fletcher was brought up to date on our current litigation cases involving paraquat, and we are preparing summaries for CTL review.
- 6) No new information has been received since the paraquat symposium on either efficacy or complications of treatment.
- 7) Dr. Fletcher endorsed our program to study the effect of inhaled O₂ on the paraquat syndrome in the dog lung and recommended we try to correlate this with blood levels. He has sent CTL's method for paraquat in blood, and I have sent a copy to Jim Leary, so we may set it up. As soon as the method is working, we will begin the dog studies.
- 8) CTL has renewed their interest in adding an emetic to paraquat. ICI Pharmaceuticals has discovered a new compound with remarkable emetic properties. As little as 5 mg can cause vomiting. ICI is looking into the possible use of this compound, but cost may be high.
- 9) Dr. Fletcher has prepared a review of the published cases of paraquat poisoning, with a view to determining whether there is evidence for an effective treatment. As you know, we have also analyzed these cases and have rewritten the argument. A copy has already been sent to you.
- 10) Dr. Fletcher described an unpublished case of paraquat poisoning by dermal absorption. An individual in Yugoslavia sprayed waist-high weeds and soaked his clothing. This was not changed for 2 days. At this time, he was seen at a hospital for a skin rash. The following day he again sprayed, this resulting in severe chemical burns. This individual died an unknown time later from what sounds like a typical paraquat death. The case has not been published and no more details are available at present.
- 11) We advised Dr. Fletcher that the progress report of CTL's activities during the last quarter was adequate.
- 12) Dr. Fletcher is being reassigned within ICI and his replacement will be Dr. Melvin Litchfield. I do not know Dr. Litchfield, but Dr. Fletcher seems to feel he will do a good job for us.

It is my understanding that our next meetings on paraquat will be on September 6, 1976 in the U.K. I plan at that time to be able to fully discuss the hematologic problems with Dr. Sanderson and the epidemiology study with Dr. Howard. Hopefully, our dog studies will be sufficiently advanced to be able to provide at a least a preliminary report.

R. E. RODMAN

Original Signed

R. D. CAVALLI

By

R. D. Cavalli

RDC:flm

Enclosures

cc: Mr. D. B. Barlow
Mr. A. P. Brown
Mr. L. F. Czufin
Mr. D. F. Dye
Mr. W. F. McCraith

cc: Mr. J. A. Spence
Mr. E. L. Stripling
Mr. A. L. Calderbank
✓ Dr. Melvin Litchfield
Dr. Ken Fletcher