Brussels, Belgium

26th January, 1967

SWEDEN, AROCLOR

DW:gb

G. R. Buchanan - St. Louis

THIS COPY FOR

P. G. Benignus - St. Louis
D. S. Cameron - Brussels
Dr. D. V. N. Hardy - London
Dr. R. Emmet Kelly - St. Louis
R.A. Steenrod - St. Louis

We recently sent you a translation of a Swedish newspaper article referring to the identification in nature of polychlorinated biphenols. Because some of the uses claimed for the materials fell in line with the uses of our own chlorinated diphenyls, we made a point, during our recent visit, to Sweden, of visiting the research institute involved and discussing their particular programme of work.

To eliminate any earlier confusion that there may have been, I should like to emphasise that there is no doubt that the chemical which is the subject of the investigation and the news release, is chlorinated diphenyl i.e. Aroclor.

The company that supplied the mass spectrometer which was used in the research programme, in fact have recently put out a press release on this work. Although I am horrified by some of the headlines in this press release, it does basically describe the research programme carried out in Sweden, and describes in clear terms how chlorinated diphenyls were identified. I therefore, enclose a copy for your files.

Jensens only aim in life as an analytical chemist, was to identify the substances found in his research work on the occurrence of insecticides in nature. The unfortunate aspect of the situation is the comments which have been added to Jensens work. He showed what was present and unqualified people have made statements as to the possible effect of what he has found.

Summarising the publication position, there were original articles covering the Stockholm conference in the Swedish daily press, and these reports were picked up also by the Danish press. You will have seen from D.V.N. Hardy's memo of the 12th January that it has also been picked up by the Shell Chemicals Laboratory in Kent, U.K. Jensen also divulged that he had been contacted by the Swedish American press agency who intended to include information about this research work in their monthly review "The Swedish American Journal". There is additionally the press review issued by LKB Productor AB which I imagine to have been sent to a number of technical journals.

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Effect in Sweden

This matter was raised with us by every capacitor manufacturer in Sweden that we visited. Fortunately there has not been too much adverse comment as yet from plant workersisénce they have not associated the polychlorinated biphenols mentioned in the article with Aroclor or Pyralene used in the Swedish factories. Jensen, however, stated that he had been approached personally by several workers associated with chlorinated diphenyls for non-electrical uses and these workers were quite worried as to the possible effect on their health.

Future Research

Arrangements are being made in Sweden for this work to be taken over by one of the medical institutes who hope to study the toxicology of the polychlorinated diphenyl residues at the levels of concentration found by Jensen. Additionally a geographical survey is to be carried out to try and determine where the highest concentrations of residue are appearing and, if possible, to detect from this the method of escape so that more security precautions can be taken. We were asked by Jensen if it was possible for Monsanto to supply any samples of the pure isomers of chlorinated diphenyl since his work indicated at the moment that the lower chlorinated isomers are fairly easily metabolised, and the potentially more dangerous constituents are the more highly chlorinated members. If he can get hold of pure isomers, he would like to carry out some work on comparitive rates of metabolisation.

Jensen is forwarding me copies of his mass spectrographs and details of sample preparation so that we have all the details of his research work.

The point that I have made to Jensen is the need for care in any further publication of his work which is made. He accepts that the toxicology of chlorinated diphenyls should only be discussed with detailed information about exposure concentrations and exposure times and that generalised statements out of context can only arouse undue public concern. If any technical journal takes up the press release from the LKB Productor Company, there is little that Monsanto could, or should do in the way of publishing rebuttals. We do not want, personally as Monsanto to get too involved in this question. I am hopeful that we

might persuade Jensen himself to write a letter defining the true extent of his own research work and placing his results in their proper perspective. It would certainly be helpful in gaining his further support if we were able to make available to him any small quantities of pure isomers.

Since we are not alone in supplying polychlorinated diphenyls to the Scandinavian market, I have drawn this matter to the attention of the other askarel manufacturers in Europe.

As you will see from the press release one of the major points that is made is the difficulty in disposing of waste chlorinated diphenyls and again I must mention that constructive recommendations for the safe disposal of our materials would be most helpful.

D. Wood.