

PLAINTIFF'S EXHIBIT
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From File
Aroclor Toxicity
C.D.C Presentation
1969-1970

STR C01523

EXHIBIT NO. 1090
11/3/92 [illegible]



Winter
CMC file

GENTLEMEN:

MY PARTICIPATION IN THIS PRESENTATION WILL BE A BRIEF REVIEW OF THE DEVELOPMENTS WHICH INCRIMINATE THE POLY-CHLORINATED BIPHENYLS INCLUDING OUR AROCLORS AS NEARLY WORLD-WIDE ENVIRONMENTAL CONTAMINANTS.

CERTAINLY ALL OF YOU ARE AWARE OF THE PRESENT CONCERN ABOUT THE RESIDUES OF DDT, ITS METABOLITES AND OTHER CHLORINATED HYDROCARBON PESTICIDES THROUGHOUT THE WORLD. SINCE WORLD WAR II AND IN THE LAST DECADE IN PARTICULAR, THERE HAS BEEN A SAMPLING NETWORK WHICH HAS IDENTIFIED DDT AND ITS METABOLITES IN PRACTICALLY EVERY LIVING ORGANISM AND IN THE AIR, WATER AND SOIL ACROSS THE FACE OF THE GLOBE. IT WOULD NOT BE UNEXPECTED TO FIND THAT EACH OF US IN THIS ROOM HAS 5 TO 10 ppm OF DDT IN OUR FATTY TISSUES.

AS ANALYTICAL TECHNIQUES HAVE IMPROVED AND INCLUDED VERY SENSITIVE GAS CHROMATOGRAPHY METHODS, INTERFERING SUBSTANCES HAVE APPEARED WHICH RAISE QUESTIONS AS TO THE VALIDITY OF PRESENT AND EARLIER DETERMINATIONS OF DDT MATERIALS.

THIS DIAGRAM INDICATES THE GAS CHROMATOGRAMS OF SEVERAL OF OUR AROCLORS. AT THE BOTTOM THE PEAKS FOR VARIOUS HYDROCARBON PESTICIDES ARE SHOWN. IT IS OBVIOUS THAT SOME OF THE PREDOMINANT PEAKS IN THE AROCLORS FALL IN THE SAME POSITION IN TERMS OF RETENTION TIME AS DDT

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AND ITS METAB LITES. PLEASE NOTICE THAT THIS IS PARTICULARLY TRUE FOR AROCLORS 1254 AND 1260 AND IT IS THESE TWO PARTICULAR POLYCHLORINATED BIPHENYLS, WHETHER MANUFACTURED BY MONSANTO OR OUR COMPETITORS, THAT ARE THE PRODUCTS WHICH ARE MOST CONSISTENTLY IDENTIFIED. LET ME EMPHASIZE THIS POINT BECAUSE IT HAS A PARTICULAR BEARING ON THE FUTURE MANUFACTURE, SALES AND USE OF THE WHOLE PRODUCT LINE.

WHERE HAVE THE PCB'S BEEN FOUND?

THIS NEXT TRANSPARENCY INDICATES LOCATIONS WHERE PCB'S HAVE BEEN REPORTED. THE AMOUNTS FOUND VARY FROM PARTS PER TRILLION IN SOME WATER SAMPLES TO HUNDREDS OF PARTS PER MILLION IN FISH AND SOME FISH-EATING BIRDS.

LET ME DIGRESS A MOMENT TO EQUATE THESE UNITS OF PPM, PPB AND PPT TO SOMETHING THAT WE ALL RECOGNIZE (SHOW TRANSPARENCY ON COMPARISON OF PPM TO FIFTHS).

RETURNING TO THE REPORTED FINDINGS OF PCB, PERHAPS I SHOULD MENTION THAT MONSANTO IS THE SOLE PRODUCER AND SUPPLIER OF POLYCHLORINATED BIPHENYLS IN THE UNITED STATES AND GREAT BRITAIN. THIS IS IMPORTANT SINCE IN ANY PUBLIC OR GOVERNMENTAL AGENCY ACTIVITY WHICH MAY LEAD TO THE RESTRICTION OF USE OF POLYCHLORINATED BIPHENYLS MAKES MONSANTO PARTICULARLY VULNERABLE FROM A PUBLIC RELATIONS STANDPOINT IN THE UNITED STATES AND GREAT BRITAIN AND PROBABLY CANADA.

IN TERMS OF TOXIC OR HARMFUL EFFECTS FROM THE PRESENCE OF PCB'S, WE CAN MAKE THESE STATEMENTS SUPPORTED BY A

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GROWING AMOUNT OF TOXICOLOGICAL RESEARCH DATA:

1. THE AROCLOR'S ARE NOT HIGHLY TOXIC FROM AN ACUTE STANDPOINT TO MAN, ANIMALS, BIRDS OR FISH. FOR EXAMPLE, THEY ARE NOT NEARLY AS TOXIC AS DDT AND CERTAINLY MUCH LESS TOXIC THAN DIELDRIN AND ALDRIN.
2. FROM A CHRONIC TOXICITY STANDPOINT, THE PCB'S MAY BE CONSIDERED "MODERATELY TOXIC" TO MAN, ANIMALS AND FISH. FROM THE STANDPOINT OF REPRODUCTION, THE PCB"S ARE HIGHLY TOXIC TO BIRDS. THIS CONCLUSION IS BASED ON ON-GOING RESEARCH AT OUR CONSULTING LABORATORY IN CHICAGO WHERE WHITE LEGHORN CHICKENS--A RELATIVELY RESISTANT MEMBER OF THE BIRD SPECIES--ARE LAYING EGGS AFTER BEING FED A DIET OF 10 PPM WHICH FAIL TO HATCH. AT 100 PPM THE EGGS HAVE GREATLY REDUCED EGG SHELL THICKNESS AS WELL.

IN THE AQUATIC ENVIRONMENT, SHRIMP APPEAR TO BE PARTICULARLY SENSITIVE TO THE PCB'S. IN A TEST CONDUCTED AT THE BUREAU OF COMMERCIAL FISHERIES LABORATORY, GULFSTREAM, FLORIDA, 5 PPB CAUSED THE DEATH OF 18 OUT OF 25 JUVENILE SHRIMP IN 18 DAYS.

ALTHOUGH AT THIS POINT THE PCB'S ARE NOT BEING TOUTED AS SERIOUS TOXICANTS, THERE HAVE BEEN COMMENTS IN EACH OF THE PUBLICATIONS WHICH HAVE APPEARED WHICH HAVE IMPLIED--IF NOT STATED DIRECTLY--THAT THESE MATERIALS ARE "HIGHLY TOXIC".

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THE FUTURE FO THESE PRODUCTS IS THREATI D MORE BY THE POTENTIAL EFFECTS ON SOME FORMS OF WILDLIFE RATHER THAN POTENTIAL TOXIC EFFECTS AS WE USUALLY THINK OF THEM IN HUMAN OR ANIMAL FOODS.

HOW DO THE PCB'S GET INTO THE ENVIRONMENT?

OUR EFFORTS TO DATE HAVE NOT BEEN COMPLETELY SUCCESSFUL IN PIN-POINTING SOURCES OF THE PCB'S. AS MR. BERGEN AND MR. SPRINGATE WILL DISCUSS SHORTLY, WE DO HAVE SOME IDEAS CONCERNING SPECIFIC PRODUCT USES.

WE CAN, HOWEVER, MENTION THREE INSTANCES WHICH WILL GIVE SOME IMPRESSION AS TO SOURCES SUCH AS OUR MANUFACTURING PLANTS, A MONSANTO "CUSTOMER" PLANT, AND EARLY RESULTS OF WIDE-SPREAD SAMPLING IN LAKE MICHIGAN (SHOW TRANS-PARENCY OF SEVERN RIVER, PENSACOLA AND LAKE MICHIGAN).

THESE THREE INSTANCES REFLECT WHAT MIGHT BE TERMED DIRECT CONTAMINATION. AS YOU WILL HEAR, THE POSSIBLE SOURCES OF INDIRECT CONTAMINATION MIGHT BE RELATED TO EVERY SINGLE USE OF OUR PRODUCTS WHETHER THE USES BE IN ELECTRICAL APPLICATIONS, OTHER INDUSTRIAL FLUIDS, OR PLASTICIZER USAGE.

THE SCIENTISTS WHO HAVE PUBLISHED THEIR FINDING OF THE PCB'S IN NATURE HAVE IN EVERY INSTANCE MENTIONED THE POSSIBLE SOURCES AS INCLUDING THE LIQUID MATERIALS AS INDUSTRIAL POLLUTANTS AND THE PLASTICIZER USES WHERE IN THE MANUFACTURE OF A PLASTIC MATERIAL SOME VAPORS ARE LOST TO THE ATMOSPHERE AND ULTIMATELY END UP IN

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THE OCEAN AS CHEMICAL FALL-OUT. THEY H'VE POSTULATED ALSO THAT SINCE THE PCB'S ARE VIRTUALLY INDESTRUCTIBLE, EVERY POUND EVER MANUFACTURED ULTIMATELY HAS ESCAPED INTO THE ENVIRONMENT AND REMAINS THERE.

THE MEDICAL DEPARTMENT PROPOSES TO CONTINUE A PROGRAM, AND I MIGHT ADD--AN EXPANDED PROGRAM--WHICH WE HOPE WILL PERMIT THE CONTINUED USE OF AROCLORS 1254 AND 1260 IN THOSE APPLICATIONS WHERE ESCAPE INTO THE ENVIRONMENT CAN BE POLICED AND PREVENTED.

SECONDLY, WE HOPE TO DEVELOP DATA THAT WILL SHOW THAT THE LOWER CHLORINATED BIPHENYLS, THAT IS--AROCLOR 1242 AND THOSE LOWER IN CHLORINATION, ARE DEGRADED IN THE ENVIRONMENT AND THUS DO NOT PRESENT A THREAT TO WILDLIFE.

THERE IS SOME INDICATION FROM WORK UNDERWAY IN RUABON THAT AROCLOR 1242 WILL DEGRADE BIOLOGICALLY. AS I HAVE MENTIONED EARLIER, EXCEPT FOR ONE OR TWO INSTANCES AROCLOR 1242 HAS NOT BEEN IDENTIFIED ALONG WITH THE PESTICIDE RESIDUES. THIS IN ITSELF SUGGESTS THAT THIS MATERIAL IS DEGRADED.

WE WOULD HOPE THEN THAT OUR EFFORTS WILL PROTECT THE CONTINUED SALE AND USE OF AROCLORS 1242, WHICH AS MR. BERGEN AND MR. SPRINGATE WILL INDICATE, MAKES UP A MAJOR PORTION OF OUR AROCLOR BUSINESS.

WE WOULD BE LESS THAN HONEST, HOWEVER, IF WE DID NOT POINT OUT THAT THE SCIENTIFIC DATA TO BE DEVELOPED FROM RESEARCH SPONSORED BY MONSANTO AS WELL AS BY ANY NUMBER OF THE 50 GOVERNMENTAL OR UNIVERSITY LABORATORIES THAT

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HAVE ASKED US FOR SAMPLES MAY NOT BE FAVORABLE TO AROCLOR 1242.

AS YOU CAN IMAGINE, WE IN THE MEDICAL DEPARTMENT HAVE BEEN CONCERNED DURING THESE MANY MONTHS ABOUT THE POSSIBILITY OF LEGAL AND FINANCIAL LIABILITY WHICH MAY FACE MONSANTO IN THIS SITUATION. BUD FRENCH IS NEXT ON THE PROGRAM TO DISCUSS THIS ASPECT OF THE PROBLEM.

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