Monsanto
COMPANY

ORGANIC CHEMICALS DIVISION

800 N. Lindbergh Boulevard
St. Louis, Missouri 63166
(314) OXford 4-1000.

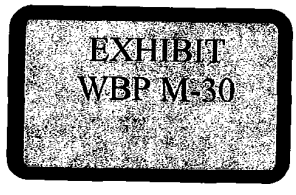
March 3, 1969

On February 24, the San Francisco Chronicle carried a major feature about "a menancing new pollutant" found in the San Francisco Bay area. The article was based on marine life research carried out by Dr. Robert Risebrough of the University of California. It stated that residues of polychlorinated biphenyl (PCB) were killing certain marine birds and posed a long-term threat to humans.

This story has caused considerable comment on the West Coast and its claims may be repeated elsewhere. As you know, Monsanto manufactures polychlorinated biphenyl and markets it under our Aroclor trade name. We, therefore, would like to present some additional facts.

The work done by Dr. Risebrough dates back to earlier research by other scientists to analyze the amount of pesticides in wildlife, soil and water. The initial pesticide research was extremely difficult since any search to detect materials in the parts-per-billion range also brings out other "interferring" substances.

DSW 009612



Several years ago, two Swedish scientists at Stockholm University's Institution of Analytical Chemistry, Professor Gunnar Widmark and Soren Jensen, reported they had identified the other substances which were appearing during analysis of chlorinated pesticide residues. They said some of the materials were polychlorinated biphenyls or PCB. The amount reported was in the parts-per-billion range, or less. Since PCB's are not "broadcast" or spread around the land as are pesticides, the scientists theorized that the source must be the industrial wastes of PCB users.

Dr. Risebrough's more recent work reports the identification of PCB, along with DDT and DDE pesticides, in the tissues of birds and fish on the West Coast.

The conclusionsof these scientists are puzzling from several aspects. Polychlorinated biphenyls are stable chemical compounds which are essentially insoluble in water. Their use does not make them easily released into the natural environment.

A principal market for PCB is in electrical applications where they are used as insulating fluids for transformers and capacitors. In this use, the chemical is completely sealed in metal containers. Another market is for heat transfer applications where the PCB fluid functions in a closed system.

PCB's are also used in several "plastic type" applications. Here the chemical is incorporated into the polymer as an integral part of the solid material. This applies whether the polymer is used as an adhesive, an elastomer or a surface coating.

The Swedish and American scientists also imply that polychlorinated biphenyls are "highly toxic" chemicals. This is simply not true. The toxicity of any material, whether it be chemicals, drugs, natural plants or even foods, is relative. Compared to the thousands of industrial chemicals and home products, PCB's are not toxic unless they are mishandled or misused. During more than thirty years of U. S. production and use, cases of any toxic effect have been extremely rare -- and then only where the simple precautions recommended for use were not followed.

DSW 009613

TOWOLDMON0003296
WATER_PCB-00000318

To our knowledge, polychlorinated biphenyls are not sprayed or dusted on crops, woodlands or any other areas, as are pesticides. It is, therefore, not only puzzling, but extremely difficult to conceive how commercially produced PCB can show up in wildlife as DDT and other pesticides appear to be. This raises the question whether the substance identified in the Swedish work, and now in California, is actually PCB -- or whether they are materials which, due to the metabolism of other materials in the marine environment, appears to be PCB.

Unfortunately, even though techniques for analyzing tissue samples have become quite precise, the ability to analyze the possible impact of naturally occurring substances in the food cycle of living organisms has not made comparable advances.

Monsanto has a research program to confirm the identity of the compounds reported to be PCB by the Swedish and California scientists. We also cooperate, on a regular basis, with federal, state and university laboratories in their analysis of chlorinated hydrocarbon residues.

Additionally, Monsanto will continue to exercise the highest degree of control in its manufacturing, shipping and storage of PCB -- as we do with all products. In the functional fluids market, we have carried out a program for several years for the reclamation of used PCB's to avoid disposal of these valuable materials.

The source of the marine life residue identified as PCB is not yet known. It will take extensive research, on a worldwide basis, to confirm or deny the initial scientific conclusions. We will keep you advised of our own research and are available to answer questions as they may arise.

Very truly yours,

Elmer P. Wheeler
Manager Environmental Health

/ecd

DSW 009614

TOWOLDMON0003297
WATER_PCB-00000319

Recipients of the letter from Elmer P. Wheeler :

Mr. Abe Kalstein
Aerovox Corporation
740 Belleville Avenue
New Bedford, Massachusetts 02745

Mr. William N. Robinson
Cornell Dubilier
1605 Rodney French Boulevard
New Bedford, Massachusetts 02744

Mr. A. O. Hauser
Electrical Utilities Company
2427 Saint Vincent Avenue
La Salle, Illinois 61301

Mr. Ray Clark
Electronic Components, Inc.
902 Crescent Avenue
Bridgeport, Connecticut 06607

Mr. M. E. Scoville
General Electric Company
10 John Street
Hudson Falls, New York 12839

Mr. Jerry Rowe, Plant Manager
P. R. Mallory
Highway 32 East
Crawfordsville, Indiana 47933

Mr. E. Blase
Sangamo Electric Company
Pickens, South Carolina 29671

Mr. Joe Kuzela
Sangamo Electric Company
1301 North 11th Street
Springfield, Illinois 62702

Mr. Livingston Rice
Sprague Electric Company
North Adams, Massachusetts 01247

Mr. Robert T. Innis
Westinghouse Electric Company
P. O. Box 341
Bloomington, Indiana 47401

Mr. James Kinney
General Electric Company
Redmond Circle
Rome, Georgia 30161

Mr. Jack Steel
R. E. Uptegraff and Company
Scottdale, Pennsylvania 15683

Mr. Edward L. Raab
General Electric Company
100 Woodlawn
Pittsfield, Massachusetts 01201

Mr. H. J. Zeck
Allis Chalmers Manufacturing Co.
Columbus and Preble Avenue N. W.
Pittsburgh, Pennsylvania 15233

Mr. Ralph Meyers
McGraw Edison/Line Materials Co.
12th and Madison Avenues
South Milwaukee, Wisconsin 53172

Mr. William Reinhardt
Moloney Electric Company
5390 Bircher Boulevard
St. Louis, Missouri 63120

Mr. Herman Gabel
Niagara Transformer
110 Church Street
Buffalo, New York 14202

Mr. John E. Schork
Research-Cottrell, Inc.
Radel Avenue
Bound Brook, New Jersey 08805

Sierra Transformer Company
8831 Miner Street
Los Angeles, California 90002

Mr. R. T. Beckler
Standard Transformer Company
Warren, Ohio 44482

Mr. B. L. Britt
Wagner Electric Corporation
6400 Plymouth Avenue
St. Louis, Missouri 63133



TOWOLDMON0003298
WATER_PCB-00000320