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PCB

BAYER REMOVES ENVIRONMENTAL POISON FROM MARKET

Voluntarily two chemical giants Bayer and Monsanto take a product off the market, with which they have made millions. The substance, polychlorinated biphenyl (PCB), which is used as a plasticizer in many plastics, and has been on the market for 40 years, appears to be more dangerous and wider spread than the insecticide DDT. Traces of PCB in high concentration have been identified in breast milk and human fat tissue.
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Crazy Mixture

Breast milk and human fat tissues are contaminated by a chemical which is more dangerous than DDT. Bayer took the most drastic decision: stop production immediately. Calmly and quietly two chemical giants wanted to bury a monster which cane out of their scientists test tubes 40 years ago and which has been unmasked as one of the most threatening and wide spread poisons in the human environment.

When asked in the middle of last week, the P.R. departments of the two chemical companies and the Ministry of Health P.R. man were unable to comment on what was discussed at a meeting two days previously (Monday, September 27) at 14.30 in the "Strobel Haus" at Bad Godesberg.

Result of the secret meeting: Bayer and the American company Monsanto are stopping this year the production of a syrupy liquid from which they derived sales of millions.

According to Bayer chemist Dr. Ernst Komarek in Bad Godesberg, both companies want to "give up" production of highly chlorinated biphenyls with the chemical abbreviation PCB.

For almost 10 years, the insecticide DDT which persists in human and animal fat tissues, has been the environmental pollutant. Now it has been discovered that the hydrocarbon chloride PCB, which is closely related with DDT and its derivatives, causes a "much greater problem than DDT," according to Dr. Charles C. Edwards, head of the American Food and Drug Administration (FDA).

The synthetically produced chemical is almost everywhere. The New York Times estimates that "several tens of thousands of tons" are annually produced mainly for two types of applications:

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a) fire resistant materials used for cooling, lubrication and insulation in the electrical industry (e.g. in large transformers) and hydraulic fluids in the machine construction industry, because PCB withstands temperatures up to 900° C.

b) plasticizers in an extensive variety of plastic products as well as in paints and stationary, e.g. glue, non-carbon duplicating paper.

Last week, after a three week silence, the FDA disclosed that PCB residues had been identified in noodles and shredded wheat. Plastic packaging films for cheese, chocolate, milk powder, bretzels, biscuits, dried fruit, rice pudding, flour, potato chips, pancakes and flaked oats had been contaminated by PCBs. William D. Ruckelshaus, head of the American environmetal authorities said the "sudden flood of information on PCB worries us." It also seems to the producers that the PCB threat has been sufficiently proved. Norbert Dahlström, European manager of the chemical company Monsanto (annual sales 6.1 billion DM) said last week to Der Spiegel: "Side effects have been observed which appear suspicious to us." With Dahlströms' remarks, new alarming news comes in from the USA:

a) The US Agricultural Ministry confirmed last Wednesday that during 1970 in the State of New York, 146.000 chicken died from PCB poisoning. This August in Minnesota, 50.000 turkeys were poisoned through exposure to PCBs.

b) Dr. Douglas Worf, physician working for the US environmental authorities stated that for the first time PCB residues have been identified in human bloodplasma.

c) Dr. Robert Risebrough, professor of chemistry at the University of Berkeley, reported to a Senate committee in Washington about two still born children who "showed symptoms of PCB poisoning."

In the meantime West German researchers found out that PCB residues already "exist throughout the human body" (according to milk specialist Dr. Walter Heeschen from Kiel). Up until September 1, food chemist professor Ludwig Acker from Münster had analysed 93 samples of human fat tissue and 45 samples of breast milk. Acker: "All samples contained PCBs."

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The fact that food chemists and environmental experts were late in recognizing the dangers of PCB, is due to its chemical relationship with DDT. Many residues, which were considered to be DDT derivatives, are in fact PCB residues. PCBs persist in human and animal tissues practically for life whilst DDT degrades after about 10 years.

Since 1930 this "unpleasant to look at liquid" (Monsanto manager Dahlström) has been produced on a large scale by industry. It was only in 1966 that Berkeley Professor Risebrough and Swedish researcher Sören Jensen both found PCB residues.

Risebrough discovered deposits of PCB residues in the body and eggs of peregrine falcons in the neighbourhood of San Francisco; Jensen in fish and fish spawn near Stockholm.

Further analyses of fish from the Baltic Sea showed that PCBs pass freely along the socalled maritime food chain - via crabs, herrings and seals to the breast muscles of sea eagles. The result: only two of ten pairs of sea eagles living in the islands off Stockholm, have successfully hatched eggs during the last decade.

What kind of dangers PCBs constitute for humanity, was only realized in 1968 when five people died in Japan - poisoned by rice cooked in PCB-contaminated oil. Another 1000 Japanese were suffering at that time from serious skin inflammations, called chlorine acne.

In the meantime, researchers consider it to be proved that, apart from the Japanese rice eaters incident, PCBs are getting into the human body.

The Swede Jensen discovered residues not only in his and his wife's hair, but also in the hair of his five-month-old daughter. Jensen suspects that the poison got into the child's body via her mother's milk. Researchers in Münster found in the milk fat of breast milk samples a PCB concentration three times as high as DDT, and in the fat tissue a concentration five times as high.

Although in smaller quantities (according to milk researcher Dr. Heeschen), PCB was found in all breast milk samples coming to the Federal Institute of Milk Research from the Kiel area. Kiel researchers are now concentrating on checking cow milk for PCBs.

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Unlike their American collegues, the Münster researchers believe that PCB does not only enter the human body via the food chain, but also by normal respiration.

A first indication of this theory was found by Acker during analysis of fat tissues in his laboratory. It could not be explained why solvents that had been in contact with the open air were repeatedly contaminated by PCBs. Acker: "It was found out that the oil-based paint used to decorate the laboratory walls, contained PCB as a plasticizer". After that PCB could be identified in the open air in "considerable amounts".

In the haze over Hamburg and London traces of PCB were found already in the mid-60s. At that time, nobody paid any attention. Air samples from the Rhine-Main-area were sent this week for the first time to Münster to be checked for PCB content.

If the scientists fears are confirmed, the extent of health damage - in spite of stopping production by Monsanto and Bayer, who have the PCB monopoly in Germany, United Kingdom and the USA - will be impossible to assess. Scientists at a meeting for Nobel prize winners in Göteborg during August expressed fears that PCB concentration might have "already reached proportions which will cause an irreversible disturbance of the ecosystems throughout the world".

Based on animal experiments, doctors fear that PCB causes serious liver damage. PCBs stimulate the liver to an over-production of enzymes. When this happens there is a danger that sexual hormones like progesteron, testosteron and oestradiol will decompose into water soluble compounds which would be washed out of the body.

Since last year it has also been suspected that PCB, maybe in cooperation with a second chlorine-containing product called dibenzofuran, has caused an increase in deformities in new born babies. Deformities of this kind have been proved in animal experiments, as well as found naturally in fish and chicken. Among the 1000 Japanese affected by PCB, there were several women who gave birth to deformed children.

Animal experiments in the University of Utrecht have shown that PCB caused disease of the pericardium in dwarf quails and in white leghorn cockerels. The major difficulty that scientists have, is the fact that when analyzing for residues "the compounds in question are a crazy mixture of individual components" (according to Professor Acker); these are the socalled isomers, not all of which are known and which are difficult to identify chemically.

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"We are not more papal than the pope and not more holy than the bible", that's how Monsanto manager Dahlström described from his companies' point of view the withdrawal from PCBs. His company made this decision "to avoid being thrown overboard by a wave of political emotions".

Already in March this year the Monsanto managers announced that they were withdrawing the dangerous PCBs. But for another 5 months the Anglo-American concern "had to influence Bayer" (Dahlström) before the chemical giant from Leverkusen decided to withdraw.

Last week a spokesman for Bayer said he would like to see the decision to withdraw looked upon as "a gesture of Bayer's goodwill". However, the people at Bayer, despite this gesture of goodwill, are obviously not all that happy.

During the Bad Godesberg meeting last Monday the Bayer delegate appeared to be hoping that "thorough investigations" of the influences of highly chlorinated biphenyls would not be carried out," obviously in return for the "goodwill gesture" and bearing in mind that these compounds will be withdrawn from the market.

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