1. PCB-A NEW FISHDEATH?

2. Picture: The young salmons die in the salmons station at Älvkarleö. The Fish Pathologist, Mr. N. Johansson suspects that this is caused by PCB. A loophole in the law prevents the Authorities to take any action.

3. We have got a new environmental poison - PCB. On July 26th Småland and Östergötland (counties in Sweden) were hit by a soot and oil rain. Analysis shoe that such a rain contains among other things PCB. PCB is rather like DDT, but probably more poisonous. By eating PCB-poisoned rice-oil many people in Japan have died. In Sweden "Folhälsan" have found PCB in almost all the fish and meat they have analysed.
From 1968 to 1969 the PCB-content in analysed samples increased by 50 %. Last year 80-100% of roe and young salmons died at the Salmon Research Institute at Älvkarleö. The fishes had high PCB-content. PCB is very stable. It cannot be destroyed by living organisms and is spread in nature in higher and higher concentrations. PCB is found in fishes, birds and people all over the world.
PCB is used as cooling-oil and insulating fluid in high tension transformers and as plsticizer and alga-killer in paint and sealing compounds. Because of a loophole in the law the use of PCB cannot be stopped.

4. Investigations show that soot and oil rains of the kind that hit the coast of Småland and Östergötland on Sunday contain PCB. PCB is a environmental poison that slowly steal upon us. It cannot be destroyed by living organisms. PCB is sold without limitations. A loophole in the law prevents the Authorities from doing anything against the use of it.

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5. Life-dangerous environmental poison, new DDT-threat.

6. In roe and young salmons at the Salmon Research Institute in Älvkarleö the percentage of death usually is about 10-29%. High content of PCB (polychloribated biphenyls) has been found in the roe. In Sweden "Folkhälsan" has found PCB in almost all the fish and meat they have analysed.PCB is rather like DDT but perhaps it is more poisonous that DDT. "Naturvårdsverket" has done a first review of the use in Sweden. It has been classified as strictly confidential. Because of a loophole in the law neither "Naturvårdsverket" nor "Giftnämden" can stop the use of PCB. PCB is an environmental poison which slowley but surely steals upon us. The content is closed to, is on a level with, or is above the content of DDT. The use of PCB is free. What is PCB?
It is a group of chridizing hydrocarbons, a group of clorinated biphenyls tightly tied together in a syntetic way. This is manufactured by having chlor to react with biphenyl, on aromatic hydrocarbons.

In Sweden they sell three products: The Frenchmade Pydralén, the American Aroclor and the German Clophen. The most common kind here in Sweden is Clophen which is manufactured by Bayerische Anilin in Leverkusen. Two fields of application dominate: as cooling-oil and insulation-fluid in high tension transformers and condensors and as plasticizers and alga-killers in paint - and sealing compounds.

All over the world:
It seems strange that the leakage from these rather special fields of application can be the reason for nos finding PCB in fish, birds and peolple all over the world. But PCB cannot - as far as they know - be destroyed by living organisms. If it gets in us or in nature it will circulate while the quantities increase.
A practical thing in a few technical situations becomes a grewing environmental danger.
Assistant Prof. S. Odén at "Lantbrukshögskolan" "takes finger prints" of the cities in Sweden from the environmental poison point of view by researching the content of poison in sludge of the cleaning plants. They looked for PCB in 63 cleaning plants and found it in all of them. The content was highest in the industrial areas. The content has increased with ca 50% between the tests in 1968 and 1969. Mr. Odén says that htere is no other reason for this than that PCB has been used more and more.
"Naturvårdsverket" has no right to demand the PCB-consumers to put their cards on the table.

The customer list tells:
Manager General V. Paulsson says: "Against promise of secrecy we succeeded in taking part of the Swedish PCB-sellers' customer list. I am afraid we are not allowed to publish this material".
"Naturvårdsverket" asked Ing. A. Kjällman to visit the companies which use PCB. We wrote to about 20 paint companies and electrical industries and visites some of them.
This is the quantity used in Sweden every year: 500 tons in condensors and transformers, 55 tons in PVC - and rubber paint, 15 tons in shipbottom paint, 35 tons in sealing compounds.
-"At some companies they throw it in a dump, at other places they throw it in the waste-water," Ing. Kjällman says.You notice PCB in paint, when you wash dishes and when you scrape boats.
PCB is undestroyable through burning. It cannot be disolved even if you boil it in concentrated Nitric Acid.
The transformers leak:
In electrical works they use it in a closed system. No oil or cooling fluid will leak out. When they change the oil they return the old oil to the manufacturer. But sometimes there are interuptions of the service in the transformers. "Some time ago we were warned that 3 tons transformer-oil had leaked out into a lake" says Mr. S. Jensen at "Naturvårdsverkets specialanalytiska laboratorium", Uppsala It was mineral oil. But it could as well have been PCB-oil.

At the Salmon Research Institute in Älvkarleö breeding salmons swim in the water from Dalälven river. Last year they found that a great number of the roe and the young salmons died. Alanysis at "Naturvårdsverket" showed high content of PCB in the progeny.
-"We are very worried about what will happen in the future," N. Johanson says, but we have not enough material yet to be sure it is PCB that kills the salmon progeny. What we know for sure is that the older the salmon female are the higher the PCB-content is in the roe and in the young salmons who die.

Less in wild salmons:
The wild salmons - who give material to the big salmon station - show a much smaller content of PCB. Anyway the death at some stations is as high as 35-40%. Instead of PCB there are high contents of DDT in the progeny of wild salmons, but they have not proved any connection between DDT adn the death of roe.
The environmental keepers who are more prophets than scientists say that it sure will be a day when we know that the salmons die of PCB. What else can you expect when the outleaks are free to continue?
Third part of all the salmons in Östersjön lake come of the stations ashore. To poison the progeny meens the end of salmonfishing. Even if the content in salmon not has to be so high - and today it absolutely is not - that we cannot eat the salmons.
"Folkhälsan" finds high content of PCB in the fishes from almost all the waterstreams they have analysed and even in meat, but the content in metat is lower. In Japan people have died by eating poisoned rice-oil. They know hardly anything about the Toxicological risks for human beings of the content they have now found in Swedish food. The content they have found in Japan is higher than the content here.

Might be serious:
-"The spread of these very stable poisonous materials is not enough analysed from the foodhygiene point of view", Miss G, Westöö "Folkhälsan" says. PCB might become a serious problem.
The lawmakers could never imagine that small shares of chemical and technical products from isdustries leaking out, could stay, circulate in living organisms until they (perhaps) reached highly dangerous concentrations. This is what the President of the Poison Committe, Pharmacist R. Lönngren said when he informed the Govermental Authorities for Environmental Health about this: "PCB belongs to a group of materials with qualities simular to DDT and sometimes worse that that and I think they are a problem we will have reason to analyse more. But there is as far as I know no part of the law that gives any Authority the right to take any action. This is absolutely one of the loop - holes in our law regarding the protection of environmental poisons.

The investigation takes time:
An investigation is working on a law that will stop the loopholes in our law but it will still take time. Meanwhile there is this possibility: The paint companies and the leaders of electrical idustries can take the chance to act in an environmental-kind of way themselves. For example the manufacturer of sealing compunds that leaks out 200-300 kilos PCB in Öresund every year. (Cidfish and plaice in Öresund have very high content of PCB). This also holds for the big paint company in Stockholm which is responsible for the fact that the cleaning plant in Åkeshov (near Stockholm) has to take more PCB than any other cleaning plant in Sweden.

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