

Acid News

A Newsletter from the Swedish and Norwegian NGO Secretariats on Acid Rain



Photo: Vicky Alhadeff

Acid Rain Warden in London

Acid rain: car drivers warned

Throughout Europe environmentalists campaigned during the International Acid Rain Week against exhaust emissions by issuing Acid Rain Hazard Warnings (NO_x fines) to car owners in the shape of mock parking tickets. The photo shows an Acid Rain Warden from Friends of the Earth in London, where 30,000

tickets were distributed, warning drivers that uncontrolled emissions contain nitrogen oxides (NO_x) and unburnt hydrocarbons which help to form ozone and acidic pollutants such as nitric acid. Together with sulphur emissions from power stations they create acid rain. The ticket's message for motorists was that

Members of Parliament must demand that British car emissions be reduced to the strict US standards, when EEC Environment Ministers meet to discuss the issue on June 20.

Further information about activities during the Acid Rain Week in 15 European countries will be found on page 10.



Acid News

A newsletter from the Swedish and Norwegian NGO secretariats on acid rain.

ACID NEWS is a newsletter produced jointly by the Swedish and Norwegian secretariats on acid rain. The secretariats' and the newsletter's main task is to provide environmental and nature conservation organisations and others with information on the subject of acid rain and acidification of the environment.

Anyone who is interested in these problems is invited to contact the secretariats at the address below. Any questions or requests for material will be dealt with to the best of our ability.

In order to make Acid News interesting, we are dependent on information on what is happening elsewhere in the world. So if you read or find out about something which might be of general interest, please write or send us a copy of it.

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THE SECRETARIATS

The Norwegian secretariat, "The Stop Acid Rain Campaign/Norway", is organized by six non-governmental organisations concerned with the environment:

- Nature and Youth (Natur og Ungdom)
- The Norwegian Forestry Society (Det Norske Skogselskap)
- World Wildlife Fund/Norway (Verdens Villmarksfond)
- The Norwegian Association of Anglers and Hunters (Norges Jeger- og Fiskeforbund)
- The Norwegian Society for Conservation of Nature (Norges Naturvernforbund)
- The Norwegian Mountain Touring Association (Den Norske Turistforening)

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"The Swedish NGO Secretariat and Acid Rain" is organized by four non-governmental organisations concerned with the environment:

- The Environmental Federation (Miljöförbundet)
- The Swedish Angler's National Association (Sportfiskarna)
- The Swedish Society for the Conservation of Nature (Svenska Naturskyddsföreningen)
- The Swedish Youth Association for Environmental Studies and Conservation (Fältbiologerna)

Address and telephone: see above!



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EEC Decision on Vehicle Emissions Protested

On March 21, the EEC Council of Ministers decided to allow countries to adopt varying methods to meet a staggered series of targets for vehicle emissions. Two of the main environmental pressure groups, Friends of the Earth in England and BBU in West Germany, have issued the following comment on the disappointing decisions.

Friends of the Earth

The EEC's failure to adopt the tight US and Japanese emission limits is extremely disappointing. Britain's proposal to introduce lean-burn engines with oxidative catalysts is completely inadequate. Such technology cannot cope with hydrocarbon emissions, which are also a threat to health and the environment. The program of dates setting 1988 for controls on bigger cars, 1991 for medium-sized cars and 1993 for all new cars makes it all too little and too late. It will not meet the crisis of pollution in Britain's cities or Europe's forests. Britain's Environment Minister William Waldegrave has hailed it as a victory, but although it may be a victory for car manufacturers, it is a defeat for the environment.

Friends of the Earth will therefore launch a major campaign on vehicle emissions before the meeting of the EEC Council of Ministers in June 1985. FoE will press for the adoption of US or Japanese emission standards in the UK, with the introduction of Toyota-type technology, using lean-burn engines with oxidative and catalytic converters at different air-fuel mixtures, giving the best achievable control of nitrogen oxides, hydrocarbons, and carbon monoxide.

Bundesverband Bürgerinitiativen Umweltschutz (BBU)

In the opinion of the BBU, disagreement within the EEC in regard to the introduction of catalytic converters throws characteristic light on the state of affairs

in that organization. While billions are being spent every year on activities that have a deleterious effect on the environment, no money is available in Europe for its protection.

The efforts of the Federal Republic to have catalyzers made compulsory throughout Europe will not be taken seriously unless Minister of the Interior Zimmermann determines on an immediate application of speed limits. The forests will not stop dying while the EEC is deliberating. They can only be helped by a drastic reduction of nitrogen oxides from road vehicles. The watered-down schedule for the introduction of catalysers will not lead to a reduction of pollution until late in the 1990s. Willingness to adopt catalyzers would certainly be greater within the EEC if Minister Zimmermann were to take steps to impose speed limits such as are already in force elsewhere.

The Federal government's wavering attitude in regard to environmental matters has recently been camouflaged by the coining of the expression "environmentally harmless autos". Not even cars with clean exhausts will be harmless, however, since they will still be noisy, create scrap, pollute the atmosphere, and cause more and more of the countryside to be plastered with asphalt and concrete. The language engineers of the government public relations office were supposed to make a good impression where the Kohl government's environmental policy had failed.

The BBU again urges all car drivers to limit their speed voluntarily to 100 km/h on the autobahns and to 80 on other main roads. Forest death will not be checked by decrees. What is needed is an awareness of environmental necessities and a sense of responsibility on the part of all citizens.

Japan leads the way

Anyone contemplating the paralysis of European governments as regards environmental matters, and exhaust emissions in particular, might wish he were in Japan. There things are different.

In the March report of the Wissenschaftszentrum Berlin there is an account by a Japanese scientist of what happened when catalytic converters were introduced in his country. The initiative for making exhaust controls mandatory came from the big cities, which united in setting up a group of experts. These cities, among which were Tokyo and Osaka, made a public drive for cleaner vehicle exhausts. Strict national regulations could subsequently be put into force in 1978 without any trouble.

- The emission of pollutants from road vehicles has been reduced by 90 per cent.

- Even in the case of the two million small cars with a cylinder volume of less than 550 cc, more than half are equipped with catalytic converters.

- Mazdas can be fitted with a catalyzer at an additional cost equivalent to about 120 D-marks.

- Unleaded petrol has been generally available in Japan since 1975.

- Vehicle economy has not suffered. Despite having to meet the world's strictest regulations as regards exhaust emissions, and having to be capable of using unleaded fuel, today's vehicles are 33 per cent more efficient than the corresponding models from 1975.

- There are speed limits of 100 km/h on the Japanese motorways, 80 km/h on all other non-urban highways, and 40 km/h in cities.

If the arguments of the European auto makers were tenable, then all these restrictions — speed limits, unleaded fuel, and exceptionally strict exhaust controls — should have put an end to Japanese automobile manufacturing.

While the European manufacturers are wringing their hands, the Japanese are developing a second generation of vehicles with cleaned exhausts. Toyota has a lean-burn engine that scarcely emits any carbon monoxide or nitrogen oxides at all. Hydrocarbons are reduced in an oxidating catalyzer that is no larger than a three-way converter and yet considerably cheaper. The economy is also improved.

Stricter US controls for trucks, buses

For the last ten years passenger cars in the United States have had to be equipped with catalytic converters. Now stricter controls are to be introduced for heavy vehicles as well.

The new regulations will require the control of uncombusted particles to apply for the first time to heavy diesel-driven trucks and buses. According to the US Environment Protection Agency, about half of such vehicles, as well as most city buses, will have to have some form of equipment for catching and oxidizing particles by 1992.

The proposals include emissions of nitrogen oxides. This would mean that light trucks will have to reduce their emissions by one half by 1987, and heavy trucks by 60 per cent by 1990.

Miljö o Framtid Nr. 3/1985

Catalyzers even in Russia

The mass production of equipment for catalytic cleaning of exhaust emissions can now start at Dimitrovgrad on the Volga. The converters will reduce emissions of carbon and carbon monoxide by 70-90 per cent by oxidizing incompletely combusted fuel to carbon dioxide.

Catalytic exhaust cleaning will be applied to BelAZ trucks, various passenger car and bus models, and lift trucks. The method is said to be of especial interest in the case of vehicles operating in enclosed spaces, such as mines, tunnels, etc.

Miljö o Framtid Nr. 3/1985

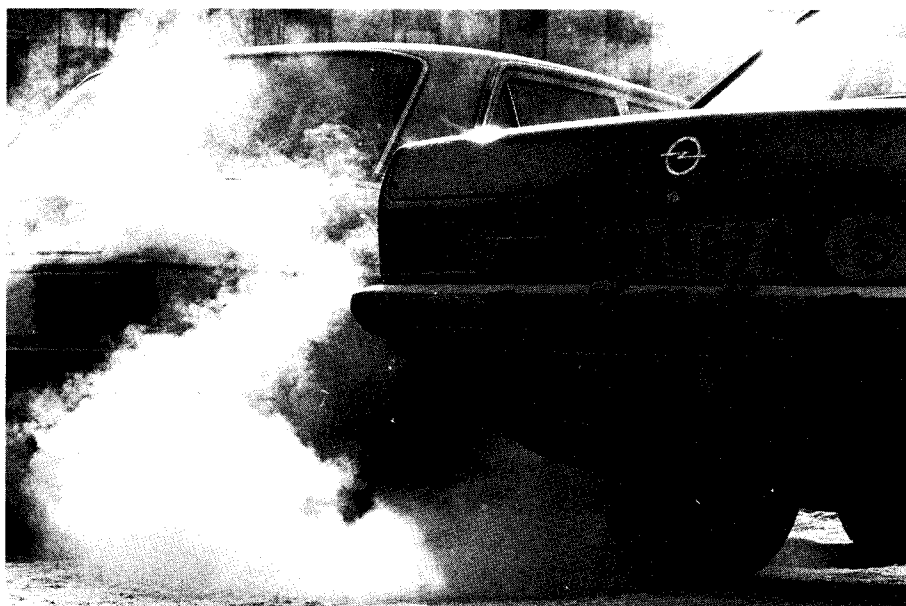


Photo: Kjell-Arne Larsson

How acid rain destroys lichens

New evidence of the role of acid rain in destroying lichens is emerging from research at the University of Sheffield, England. A study by researchers of an ancient wood in southwest Northumberland has plotted the decline of a flourishing population of large foliose lichen (*Lobaria pulmonaria*) in the past 15 years.

Oliver Gilbert of the university's department of landscape architecture reports that a well-established population of the lichen on 20 oak trees in the wood in 1969 had dwindled to a presence on five oaks by 1978, two in 1981, and total extinction by 1984.

None of the normal explanations for such a decline apply, he says. The wood's microclimate has not been disturbed, new agricultural chemicals have not

been introduced, and there has been no rise in gaseous air pollution, not even sulfur dioxide. But there has been an increasingly acid rainfall, which has resulted in an acidification of the bark of the oak trees on which the lichen grew.

Even in unpolluted areas, the oak normally has an acid bark. In the late 1960s, oaks in rural Northumberland had barks with a pH of 5.2. In the pH scale, 7 is neutral, and lower figures are increasingly acid. A pH of 5.2 is close to the most acid environment in which the *Lobaria pulmonaria* can survive.

Since the 1960s, the acidity of the bark on those trees has increased to a pH of around 4.7. Gilbert blames this change on the increasingly acid rainfall in the county. At the end of 1970s,

the pH of local rain averaged 4.2, he says.

The lichen has continued to survive on local ash trees, which are chemically better buffered against acid rain. The bark of both the ash and elm trees in Northumberland has maintained a pH of around 6 for the past two decades.

"The most likely mechanism by which acid rain could eliminate *Lobaria pulmonaria* is through the effect of low pH on nitrogen fixation of the blue-green algal component (of the lichen)", says Gilbert. In the laboratory, lichens containing the component have shown a reduction of 80 per cent in nitrogen fixation after 20 days of exposure to simulated rain with pH 4.

New Scientist, March 14, 1985

News items

The European Parliament has come out in favour of lead-free petrol and a reduction in the maximum lead content of petrol as from July 1, 1986. It calls for a fixing of the maximum lead content of petrol at 0.15 grams per litre as from July 1, 1989, for the maximum benzene content of leaded and lead-free petrol to be fixed at 5 per cent and the benzene content of lead-free petrol to be further reduced on July 1, 1989, and for vehicles whose exhaust gases exceed the permitted pollution levels to be banned from the roads as from October 1, 1986.

Six countries already offer lead-free petrol to motorists: the Federal Republic of Germany, Switzerland and, since the beginning of 1985, Denmark, Sweden, Belgium and Luxembourg.

Newsletter Nature, No 1, 1985

The French Government, faced with a worsening of the effects of acid rain in Europe and in France itself, where 25 per cent of the trees are already effected in the Vosges mountains, has

adopted a series of measures to reduce harmful emissions. As from 1986, residential and industrial buildings which acquire new boilers will be required to adopt the new "fluidized bed" combustion technique. The burning of oil coke, which has a very high sulphur content, will be prohibited. In 1990, floating roofs will become compulsory for large oil storage tanks, this being to reduce hydrocarbon evaporation (10,000 metric tons of oil). Also in 1990, printing works, paint shops and dry cleaning firms will be required to burn their solvents or process their waste. Domestic and industrial refuse-incineration plants will be required to process the gases they discharge so as to reduce hydrochloric acid emissions by 90 per cent, aluminium factories will be required to reduce their discharges of hydrochloric acid by three-quarters, and 800 factories to monitor their gas emissions by taking daily readings.

Newsletter Nature, No 1, 1985

Austria. The Austrian Government has decided that lead-free petrol should be on sale at all filling stations as from October 1985. American pollution emission standards are to be applied. Any car meeting these standards on October 1, 1991, will qualify its owner for a reward of 7,000 schillings.

Newsletter Nature, No 2, 1985

Liechtenstein. The situation is getting worse. One-third of Liechtenstein's forests is damaged, 46 per cent of conifer forests alone being affected. One of the Liechtenstein forest's principal functions is protection, and its future is regarded as a life-or-death issue. The Government has accordingly taken immediate measures: since January 1 speed limits of 50 km/h in built-up areas and 80 km/h outside have been imposed. Cars equipped with catalytic converters will be exempted from taxes, and public transport fares will be greatly reduced.

Newsletter Nature, No 2, 1985

Green/Machine contest

The battle to save Switzerland's forests from the effects of air pollution is now officially engaged. On one side is an influential automobile lobby opposed to lower speed limits as a means of saving trees; on the other are environment-conscious politicians and an array of conservationist interest groups. And this is no local issue: neighbouring West Germany is already on the horns of much the same dilemma and Switzerland's plight could soon be repeated throughout Europe.

The crisis may have come to a head soonest in Switzerland because forest loss is a matter of life and death in some parts of such a mountainous country. Ironically, no nation has done more than Switzerland to make forest conservation a way of life, particularly in the interests of landslide and avalanche control. More than 100 years ago, Switzerland passed a tough, comprehensive law to make sure its forests were preserved into posterity. The 1876 measure, designed to halt over-exploitation of forests, was extended nationwide in 1902. It required that all tree-cutting be followed by generous replanting. Now the nation is in the grips of a man-made crisis that is threatening to undo over a century of hard work.

Not only sulphur

Most existing studies of acid rain pollution have blamed fallout from power stations and factories as the main culprit. The Swiss national network of air pollution monitoring stations (NABEL) published however a bombshell report in 1983 showing that Switzerland's share of the problem could not be blamed wholly on heavy industry at home or in neighbouring countries.

NABEL had figures to show that oxides of nitrogen, 80 per cent of them produced by motor vehicle exhausts, were building up in the environment at a rate exceeding 10 per cent a year.

NABEL also said that oxides of sulphur from other — mainly industrial — sources inside and outside Switzerland were building up at a similar rate. Both categories of oxides are known triggers of the acid rain phenomenon, although the relative importance of the two varies considerably from country to country and from region to region.

Reinforcing the NABEL report, field studies produced a mass of evidence to show that across the whole Swiss landscape of alps and river valleys, an average of one in three trees is "doomed or dead". In some areas, such as the heavily-populated northern region around Switzerland's largest city, Zürich, and in the southern alpine cantons of the Grisons and the Valais, the toll is nearer one in two.

Speed limits

Last year, in a move to counter the car exhaust pollution threat, the federal government imposed speed limits of 120 km/h on autoroutes and 80 km/h on minor roads. It is now considering cutting the top speed on autoroutes to 100 km/h. In 1986 motorists will face mandatory requirements to use exhaust catalysers and lead-free petrol.

But the automobile lobby in Switzerland has recently succeeded in forcing a national referendum calling for the repeal of the speed limits imposed last year. An inconclusive stand-off between Green and Machine is threatened in what is arguably Europe's most environment-conscious nation.

There are certainly important amounts of acidifying pollution in Switzerland which cannot be blamed on car exhausts and which come from sources the Swiss nation cannot control. The country's own industries emit the lowest level of sulphur pollution in Europe. But a lot of this form of fallout is imported on the wind, especially from Germany.

Switzerland, however, has the densest road network in Europe, with 63,000 kilometres of paved roads, and an extremely high density of automobiles — 2.7 million for its 5.5 million people. It is hardly surprising, in hindsight, that so much of Switzerland's surplus of airborne oxides turns out to be homemade.

Although there has been much hue and cry about *Waldsterben* throughout Europe, actual moves to counter the problem have been slowed down in Switzerland and elsewhere by a lack of agreement on ways and means.

Switzerland, not a member of the EEC, so far has gone it alone on lowering speed limits to save trees. Public pressure evidently inspired a majority of the Swiss Lower House to call for a more drastic reduction in speed limits than the 10 kilometres lopped off the 130 km/h motorway limit by the ruling seven-member Federal Council last year.

At the same time, however, the Upper House has sidestepped the issue of lowering limits further by refusing to endorse the Lower House call and referring the matter back to the Federal Council. Meanwhile, a group backed by car clubs and industry lobbyists has formed a new "Automobile Party" with the limited platform of easing rather than tightening speed restrictions, and creating more parking space.

Petition

The opposition has mustered some 263,000 names — 163,000 more than needed — on a petition that will force a national anti-speed-limit referendum. This despite the fact the Swiss government has provided conclusive evidence linking the death of trees to exhaust emissions.

Thomas W. Netter
IUCN, World Conservation
Centre, Switzerland

Seeing wood for trees

The UK Forestry Commission has just announced the results of the first national survey of Britain's trees. Now, according to the British press, the trees are not being damaged by acid rain. This, however, is not what the survey concludes. Steve Elsworth reports.

One of the interesting things about forest dieback in Europe is that the phenomenon seems to be spreading outwards from a point centring on the Ruhr in the Federal Republic. Reports of damage have been coming for some time from Czechoslovakia and Poland, but 1984 saw trees being blighted in northern Italy, eastern France, southern Sweden, and the Netherlands, an unconfirmed reports early in 1985 indicate that damage is now being noted in Norway as well.

The environmental movement in the UK has suspected for some time that trees in Britain are suffering too. In the summer of last year, Friends of the Earth (Scotland) brought a German forester to the UK to look at the trees; he found several instances of tree stress which strongly resembled the sickness of the West German forests. Were they being damaged by acid rain? Nobody knows.

Forestry Commission survey

We thought we were going to find out the answer when the UK Forestry Commission announced the results of the first national tree survey in Britain. They had consulted a German tree pathologist and run a survey over five months, using sophisticated technology and covering 100 sites around Britain. The next day, the British press announced that the British forests were not being damaged by acid rain. This is what the Forestry Commission survey *appears* to conclude, but it is in fact not the case. A careful examination of the survey technique will explain why.

The Commission selected 100 sites where they thought damage might be possible on account of rainfall, altitude, and sulphur de-

position. Professional field survey foresters then visited the sites and selected 24 trees in each area. These were assessed for crown density, needle life, browning or yellowing, shoot death, insect or fungal damage as well as tree diameter and height. Crown density was calculated according to the degree of fullness of the canopy as regards both branches and needles. Class 0 refers to a tree showing no more than 10 per cent needle and branch loss; Class 1, 11-25 per cent; 2, 26-60 per cent; 3, 61-99 per cent; and 4, 100 per cent.

On the face of it, the coniferous trees in Britain are as damaged as in some other countries of Europe: the Scots pine, for example, show 22.3 per cent of the sample having medium to severe damage, similar to figures recorded in eastern France. Another reading could be that the large number of Class 1 trees show that Britain's forests are beginning to be affected, but have not so far suffered significantly. The Forestry Commission inclines to a third interpretation, namely that the UK has a windy, wet climate, and in such circumstances we could expect to see damage to our trees — particularly in areas which are exposed to winds off the sea. The damage figures, say the Commission, are "well within the usual range of our experience". This interpretation seems as likely as the other two to be correct.

Percentage distribution of sample trees by crown density class

	0	1	2	3	4
Scots pine	48.0	29.5	16.9	5.4	0.2
Sitka spruce	65.3	28.3	5.8	0.4	0.1
Norway spruce	71.4	25.9	2.5	0.3	0.2

Vulnerable trees not checked

Further checking, however, reveals the limitations of the Commission's approach. Trees over 45 years old were excluded from



Photo: Kjell-Arne Larsson

Forest vitality endangered



Photo: Christer Ågren

→ the survey, as the exercise is to be continued for the next ten years, and the Commission wanted its sample to be still standing after another decade. German experience, however, indicates that older trees show the signs of damage first: excluding those over 45 years old means that the most vulnerable trees, 15 per cent of the potential survey area, were not checked for signs of damage.

As well as this, the Commission ignored trees which stood facing the wind, because they did not want to confuse storm damage with that caused by air pollution. Common sense indicates that if trees are being harmed from the air, it is precisely those trees facing the wind which will suffer first. There is still the question of what has caused the damage: if you see an affected tree, is it due to wind, storm, drought, etc, or air pollution? The Forestry Commission told the House of Commons Committee on Acid Rain in June 1984 that if there were adverse meteorological conditions (unseasonal frosts, dry winds, etc) then they would ascribe damage to these rather than to air pollu-

tion. The UK environmental movement argues that the FC's mind was made up before the survey began.

So, are the UK's forests being damaged by acid rain? Nobody knows at the moment. The Forestry Commission's survey is a useful exercise in monitoring trends over the next ten years, but should not, according to the German pathologist, Dr Hartmann, who helped set up the survey, be extrapolated in an attempt to show the current state of health of the UK forests. Friends of the Earth are going to carry out their own survey later in the year; until that is done, or the Forestry Commission revises its own survey, nobody knows how healthy or unhealthy are the trees in Britain. The younger ones are OK, we are told: "But", says Friends of the Earth campaigner Chris Rose, "that is like carrying out a survey of lung cancer by checking the health of children who are too young to smoke."

Steve Elsworth

Steve Elsworth's book *Acid Rain* was published by Pluto Press in September 1984, price 3.95 pounds.

The state of health of the Dutch forests is cause for grave concern. Such is the conclusion of a recent national inventory. Although the weather was favourable for trees during the year preceding the investigation, there was found to be a tendency towards declining health. There had been no discernible improvement or even stabilization since 1983.

In 1984 a systematic sampling was undertaken. The condition of 70,000 trees in 2,800 places was noted, and site and stand characteristics recorded for every plot. From this it appeared that 50.5 per cent of the Dutch forests were healthy — which means that the frost had probably been normal for the specific site and region in the case of 50.5 per cent of the sampling plots.

Of the whole forest stock, 40 per cent is no longer vital or healthy. The symptoms show that something is wrong, but a return to a healthy condition will still be possible.

Sick forests were noted at 8 per cent of the plots. It is expected that a major part of these stands will have to be replaced within ten years. This is much faster than the normal replacement. The remaining 1.5 per cent has no future and will soon have to be felled.

Damage by insects, diseases, drought, and other known factors are only responsible to a limited extent for the bad shape of the forests. Air pollution is considered to be the major factor. Especially damaged are forests on soils that are susceptible to the input of acids, and of Dutch forest soils 75 per cent are of this kind. Stand characteristics that are considered to make for increased deposition of airborne pollutants are also linked with significantly higher damage rates. Summary of a report published by the Netherlands State Forest Administration (Staatsbosbeheer), January 1985

Acid Rain Goes West

Acid rain legislation died last spring when Congress split along regional lines — the Northeast, with its sensitive lakes, against the Middle West, with its coal-burning power plants, with the other states wondering why they should worry about someone else's problem. This year's debate promises to be different: recent studies have shown the Rocky Mountains to be threatened with the same devastation Rocky Mountains to be threatened with the same devastation that has poisoned Appalachian Mountain ecosystems.

The singular physical characteristics that lend such beauty to the West also make it vulnerable to acid rain. High mountain watersheds with their thin soils, rocky outcroppings and limited flora lack the chemical components that would counteract the sulphuric and nitric acid pollutants that fall in acid rains and snows.

A 1982 study in the Sierra Nevadas by a team from the University of California at Santa Barbara concluded that most alpine lakes are extremely sensitive to acid rain. Alpine lakes in Colorado's Rockies, Wyoming's Wind River Range and Washington's Cascades share this low resistance to acid rain. A recent study by the Environmental Defense Fund showed that similar lakes in Scandinavia began losing fish and plant life after rainfall became about as acid as it is now in the West. In recent years, rainfall in Mesa Verde, Rocky Mountain, Yellowstone and other national parks has been as polluted as rain in Scandinavia and parts of the East suffering acid damage.

The first signs of biological damage may be appearing. Salamanders, among the most acid-sensitive creatures, have ceased reproducing in a few high-mountain Colorado lakes that receive an "acid shock" during the spring thaw. Fog and clouds as acidic as lemon juice may be contributing to the damage ob-

served in pine trees in the mountains of southern California.

Acid rain in the West arises from the same manmade pollutants that are its source in the East: oxides of sulfur and nitrogen from factories, power plants and automobiles. However, copper smelters are a major source of sulfur oxides in the West, emitting about two thirds of the total. Two Arizona smelters alone, emitting without any controls, contribute 550,000 tons of sulfur dioxide annually, more than one third of the total in the Rocky Mountain states.



The pollution, already at critical levels, could worsen. Dozens of new power plants and synthetic fuel plants, emitting hundreds of thousands of tons of oxides of sulfur and nitrogen, are currently on the drawing boards. A mammoth uncontrolled source of sulfur dioxide, more than 500,000 tons a year, will be added just 60 miles south of the border, in Nacozari, Mexico, by 1986. These new sources will send the acidity marker through the roof even if American copper smelters are brought under control.

We need Federal action to protect our natural resources from irreversible damage without deterring economic growth. Any such plan must establish regional limits on emission from currently uncontrolled sources and assure adequate controls on all new sources. Much can be accomplished with stricter enforcement of existing regulations, but we must ultimately strengthen the Clean Air Act.

The plan should also include provisions to bring the emissions of the Nacozari smelter under control. However, it will be difficult for the Administration to accomplish this goal given its current position on acid rain. When President Reagan meets Brian Mulroney next month, the Canadian Prime Minister will undoubtedly remind him that acid rain is one American export that Canadians could do without. The President will almost surely repeat his Administration's refrain: we don't know enough to act on acid rain. This would seem to bar negotiations with the Mexicans.

A more prudent course is available. The Administration should acknowledge the entreaties of the National Academy of Science and its own Office of Science and Technology Policy, both of which have called for reductions in acid emissions. Then it should drop its opposition to the strengthening of the Clean Air Act while negotiating with Canada and Mexico to reduce transboundary air pollution. The clock is running on our priceless but fragile forests and waters.

Michael Oppenheimer

*The New York Times,
February 20, 1985*

Canada to Cut Emissions

The Provinces of Manitoba, New Brunswick, Newfoundland, Nova Scotia, Prince Edward Island, Ontario, and Quebec and the Canadian Federal Government have agreed that annual sulphur dioxide emissions will be cut to 50 per cent below 1980 levels by 1994. The governments agreed to share the costs of accomplishing the cutbacks, but did not establish a specific funding mechanism to distribute the costs among the governments and affected industries. (See also *Environ. Reporter, Current Developments*, p. 1767, Feb. 22.)

Acid Precipitation Digest, April 1985

Problems of Air Pollution

Discussion about acid rain and air pollution focuses mainly on the situation in Western Europe and the North American continent. In the Eastern European countries, however, the problems caused by air pollution are often much more severe than in the West. Because air pollution poses transboundary problems, discussions in the West should in future pay more attention to these countries. Here I will give a short view of the situation in the People's Republic of Poland. Reports on the situation in the German Democratic Republic and Czechoslovakia will follow later.

Increase during last decade

In the People's Republic of Poland the problems caused by acid rain and by air pollution in general are extremely severe and have become aggravated during the last ten years. In particular in heavily industrialized regions such as Upper Silesia the amount of emissions grew at a very fast pace in the seventies. While it was possible to stabilize or even slightly reduce air pollution in other mature industrial regions in western countries, as in the Ruhr valley in West Germany and the Pittsburgh Region in the United States, the situation in Upper Silesia has deteriorated: there the amount of gaseous emissions in general grew from 2 million tons in 1975 to some 4.4 million tons in 1980. In the same period, sulphur dioxide emissions rose from 1.1 to 1.7 million tons. Per square kilometre, the emissions in Upper Silesia are five times higher than in the Ruhr valley, the "main emitter" in West Germany.

Considerable imports

In addition to these high domestic emissions, Poland "imports" considerable amounts of airborne pollution from the German Dem-

ocratic Republic and Czechoslovakia. Experts estimate that an additional 1 million tons comes from these two countries.

Despite the high level of emissions, the ambient air quality as regards sulphur dioxide has been stabilized or even reduced in the main industrial regions. The main instrument for the achievement of these results has been the construction of high smokestacks. With their help it was possible to "export" pollution to other parts of Poland, the western Soviet Union, and the countries of northern Europe.



"Waldsterben"

In Upper Silesia, "Waldsterben" has been known since 1890. At that time it was proven by scientists that in a forest near Katowice, in the center of the Upper Silesian industrial regions, trees had been damaged by sulphur dioxide emissions. During the last 90 years, and in particular in the 1970s, "Waldsterben" affected most of the forests in Upper Silesia. Today, every coniferous forest in Upper Silesia is severely affected. Moreover, the dispersion of pollution by high smokestacks led to an unprecedented "Waldsterben" in the southern and the southwestern parts of Poland as well as in northern Czechoslovakia. Today there is a belt of affected forests reaching from Bavaria over northern Czechoslovakia, the southern dis-

tricts of the German Democratic Republic and southern Poland to the western parts of the Soviet Union.

Growing concern

In contradistinction to Czechoslovakia and the Soviet Union, where data on air pollution is secret and discussion on these issues is therefore restricted, in Poland we find growing "official" concern about these problems and even a strong environmentalist movement which is not controlled by the government. The main group among the Polish environmentalists is the "Ecological Club", which was founded in Cracow during the time of Solidarnosc. This group was able to survive even under martial law and today it has working groups in all major Polish cities. But despite this growing concern about the environment, the future looks dim in Poland. Due to the severe economic crisis, there will be no money in Poland for abatement technologies for some years to come.

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Acid Rain Week

in more than 15 countries

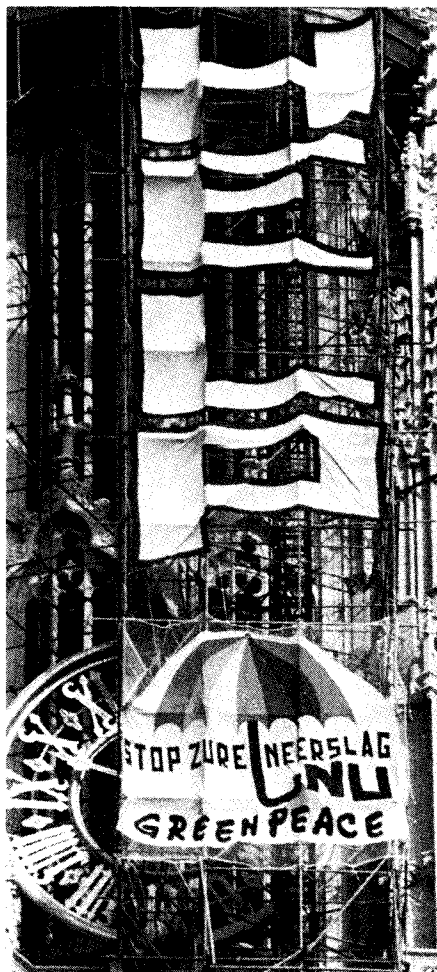
The week of April 14-21 was the time set of the third International Acid Rain Week initiated by the IYF. It proved to be a major success. Hundreds of organizations in countries where acid rain is felt to be a problem were able to organize actions to attract public attention to one of the most threatening environmental problems of our day. Last year international publicity was gained by stack climbing in different countries. This time the actions were more diverse and involved many more people. Especially in the Netherlands, where a "forest alert" action was staged, thousands of people were personally informed about acid rain. At WISE, FoE and the Swedish NGO Secretariat on Acid Rain we have tried to keep track of the actions, but a real overview is impossible. So many groups were involved in mainly local actions in so many different countries that it is difficult to give a full report.

Actions we know of were carried out in Finland, Sweden, Norway, Denmark, West Germany, Poland, Czechoslovakia, the Netherlands, Belgium, Eire, England, Scotland, France, Austria, Italy, Portugal, USA and Canada — in many cases using the same methods.

NO_x fines, on fake tickets explaining the nitrogen oxide problem, were issued to car drivers in several countries — in the UK by members of Friends of the Earth wearing wardens' uniforms, in Holland by members of the Dutch Youth Federation for Nature Conservation. In all countries exhibitions, discussion evenings, information markets and lectures were organized.

In Freiburg, West Germany, the week started on the 13th with a demonstration supported by a

broad coalition of organizations from the left, green to social democrat, and environmental, fishing, and forestry groups and scientific institutes. Six thousand people participated on the first Saturday of the action week when the rain was pouring down from the clouds.



In the UK a press conference on the 17th was attended by politicians from all parties. The conference unveiled the "30-per-cent declaration" calling on the UK government to join the 30-per-cent club — the club of countries declaring their intention to reduce emissions by 30 per cent. The declaration was signed by 27 UK environmental and nature conservation organizations. A large spruce from Wales, dam-

aged by acid rain was carried in funeral procession near the Houses of the Parliament by members of the Friends of the Earth organization. The demonstration was also attended by Members of Parliament and representatives of the Greater London Council.

In Antwerp, Belgium, on April 15 Greenpeace members climbed a cathedral tower, demanding an interview with the Belgium authorities dealing with acid rain. After an occupation of more than 24 hours they got the interview with the Belgian state secretary for environmental affairs, Mr Aerts. They also succeeded in talking with the city council of Antwerp which supported Greenpeace's demands for a reduction of sulphur and nitrogen oxide emissions and promised to put pressure on the Belgian government to support these demands in the European Parliament.

Other actions in Belgium included NO_x fines, exhibitions, and forest excursions. In France a demonstration was held along the Champs Elysées carrying dead trees and handing a protest letter on France's attitude towards lead-free petrol to the Syndicate of Automobile Companies. Also in eastern France a dead tree was carried in a procession from Aubure to Calmar where an exhibition on acid rain was organized.

In Wales and Scotland, as well as in West Germany, Austria and the USA, balloons were released at emission sources, symbolizing the spread of acidifying substances.

In Austria a bike-ride through Vienna took place. Embassies of the UK, France, Czechoslovakia, and Italy were visited with demands that strong measures be taken.

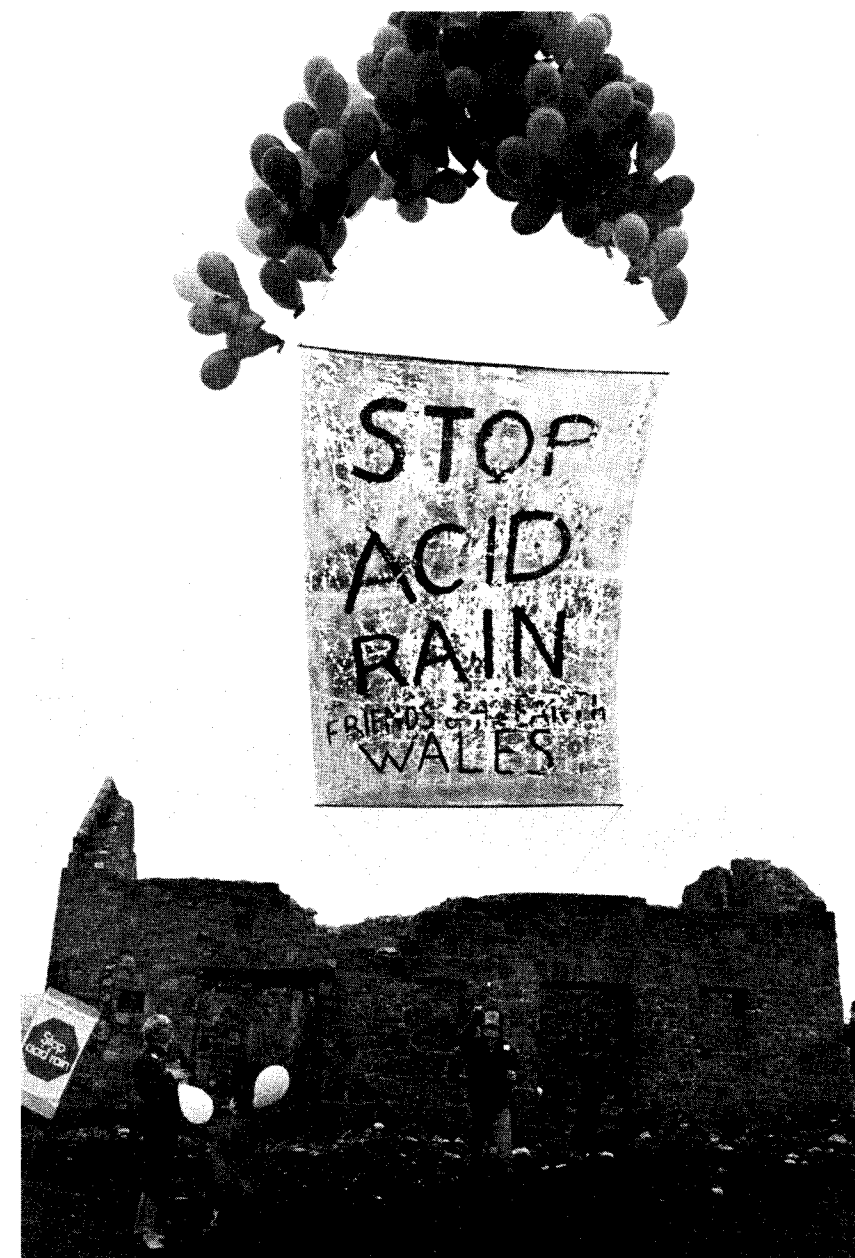
In the Netherlands, too, a broad coalition of environmental groups organized actions. The main national one was the "forest alert" in which 10,000 people were escorted through the damaged forests by 1200 trained guides. It was only due to the rainy weather that many more people did not participate in this unique action carried out by some 20 environmental organizations. A special excursion in which some 100 people — politicians, scientists, industrialists, environmentalists, as well as the Minister for Environmental Affairs — participated, drew wide media coverage.

The acid rain week also received support from Netherlands authorities and garage owners. In the north of the country the police handed out leaflets on acid rain whenever a car had been stopped for exceeding the speed limit. Together with the fine ticket the driver received information on acid rain. Garage owners organized in the BOVAG supported the action by doing check-ups of cars for half the price during the week, and spreading leaflets written by environmental organizations and the BOVAG.

In Italy a large manifestation in Rome, called "On Behalf of Polluted People", also dealt with the acid rain problem and protested against the use of coal-fired power plants without cleaning technology.

In Scandinavia many local actions were carried out, informing the public on acid rain, on the importance of energy saving and greater use of public transport. In Norway the week started on the 12th with a press conference arranged by environmental organizations, where a document was released finally proving that acid rain is really damaging the forests in Norway as well.

All these actions, carried out by many organizations, not only drew wide public attention to the acid rain problem. The week also



Near 'Aberthaw' Powerstation, Wales

Photo: Richard Baker

strengthened national and international networks, because in many cases they were carried out by broad coalitions, and the international contacts functioned much better during this third Acid Rain Week than in the previous ones.

International cooperation between environmental movements will also be strengthened by the International Citizens Conference on Acid Rain that was held May 20–25 in the Netherlands, organized by Friends of the Earth International, and the Interna-

tional Action Conference against Forest-dying and Air Pollution in Strasbourg, France, from June 7 to 9, 1985, which a large number of organizations have been arranging.

Thijs de la Court
WISE-Amsterdam

Prominent polluter arraigned

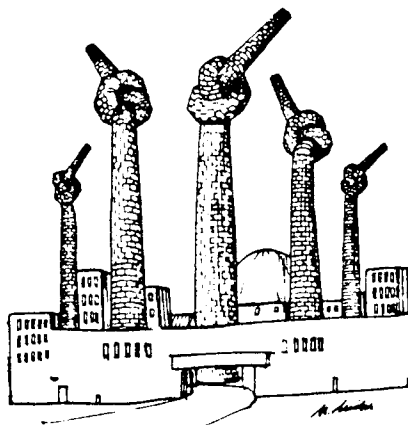
Last February a large German power company was publicly arraigned before a mock tribunal. The company was Rheinisch Westfälisches Elektrizitätsverk, commonly known as RWE, which generates 40 per cent of West Germany's electricity, mostly from brown coal (58 per cent) and ordinary coal (22 per cent).

With an annual contribution of about 0.7 million tons of sulphur dioxide and corresponding amounts of nitrogen oxides to global air pollution, RWE is one of the worst offenders in Europe. By way of comparison, emissions of SO₂ in Sweden amount to 0.3 million tons for the whole country.

This public utility is largely controlled by a number of West German municipalities, whose holding of 30 per cent of the shares gives them 60 per cent of the votes at stockholders' meetings. A call late in 1983 to these municipal shareholders to keep quiet about RWE's environmental policy, or non-policy, aroused West German environmentalists, who determined to bring the matter into the open.

The tribunal, which sat in one of the buildings at a disused mine on the outskirts of Essen, RWE's home base, drew an attendance of 100-200 persons, including several TV teams and numerous press reporters. The RWE was not officially present — the company claiming that the tribunal was illegal and arranged by irresponsible individuals. It was however rumoured to have spies among the audience.

The five-member tribunal, comprising two West Germans, an Austrian, a Frenchwoman, and the undersigned — all with environmental connections — made comments and put questions to some 20 speakers during the three-day session. The proceedings covered the various aspects of RWE's guilt in respect of the environment — including, besides its massive emissions of



pollutants, energy and nuclear policy, dying forests, the lowering of the water table in the Netherlands as a result of the company's brown-coal mining operations, and effects on health, especially of children.

The session concluded with the formulation of a seven-point indictment of RWE, embodying essentially the following:

1. The company not only spreads enormous amounts of pollutants to the atmosphere, but is also active in obstructing international efforts to restrain and reduce such pollution.
2. With its condensing power plants it indulges in a large-scale waste of energy (two thirds being cooled off into air and water), backed up by intensive propaganda for a general switch to domestic heating by the electricity so generated.
- 3-4. Its coal-mining operations have serious social-economic and ecological effects.
5. Through its engagement in nuclear power production, RWE is involved, directly or indirectly, in the whole chain of processes from uranium mining to the manufacture of plutonium for atomic weapons.
6. It is engaged in the "legalized corruption" of local politicians and officials.
7. The company is also guilty of manipulating information to the public.

While this type of "extra-parliamentarism" is well established in Scandinavia, it is new to West Germany. There, however, environmentalists have long realized the necessity for taking over where the official agencies have failed to take steps to deal with the causes of acid rain, and this tribunal was an important manifestation of activity on the part of a well-informed environmentalist movement.

Björn Guterstam
Miljöförbundet

The United West German Environmental Movement has previously published a book on the RWE, entitled "RWE — Ein Riese mit Ausstrahlung", Verlag Kölner Volksblatt, Palmstrasse 17, 5000 Köln 1, BRD. 1984.

Power company sued

For the first time a lawsuit has been brought in West Germany on account of forest damage. Proceedings started last December at a lower court in Stuttgart, the plaintiff being the Holy Ghost Foundation of Schwäbisch Hall, and the defendant the Swabian power company EWS.

Damages to the amount of 100,000 D-marks are being claimed by the Foundation to cover the loss in increment and quality suffered on its 735 hectares of forest. Emissions from a coal-fired power plant are said to be the direct cause of the damage.

Since the result will create a precedent, the case appears likely to be long drawn-out. If judgment should go against it, the Foundation intends to sue the Federal Republic for inadequate regulations in regard to the forests and human environment.

Smokestacks occupied

Early on March 25, ten activists from Friends of the Earth-Holland occupied four smokestacks at the Shell refinery in Pernis, near Rotterdam. The activists hung banners from the stacks reading "Stop Acid Rain Now" and "Profit is Sour". After remaining on the stacks for several hours, the group descended voluntarily. There were no arrests.

FoE's action was intended to draw attention to the significant contribution that refineries make to acid rain. The action was focused on Shell because it is by far the largest polluter of the six companies which operate refineries in the Netherlands. The action also provided a counterbalance to a current government campaign on acid rain, which mainly blames automobiles for the problem and virtually ignores industry's contribution.

FoE's occupation of the smokestacks marks the beginning of a national campaign against air pollution by refineries. The campaign motto uses Shell's own slogan "Shell Helps", adding "With the Ruination of Our Forests".

Refineries are responsible for 30 per cent of all sulfur-dioxide emissions in the Netherlands. In 1982, sulfur-dioxide emissions were 118,400 tons, with 59,000 tons coming from Shell. According to FoE-Holland, current government policy on acid rain is insufficient. To reduce acid rain producing emissions, the environmental organization is demanding the installation of filters at refineries and electricity generating stations. Rather than filters, the government is requiring a step-by-step reduction in emis-

sions over the next 10 years. This permits industry to use other methods, for example burning natural gas instead of oil to reduce emissions. Natural gas contains almost no sulphur, and the burning of natural gas would automatically reduce emissions of sulphur-dioxide. FoE-Holland objects to this policy on the basis that natural gas should be reserved for uses where the introduction of filters is not feasible, as for instance in households or small industrial plants.

FoE-Holland has calculated that Dutch refineries can reduce their emissions by 30,000 to 40,000 tons annually. FoE's calculations are published in a Dutch-language booklet: "Refineries and Acid Rain: Shell Can Help Too".

Contact: Milieu Defensie (FoE-Holland)
2e Weteringplantsoen 9
1017 ZD Amsterdam
The Netherlands



Coal powerplant Firmersdorf in Ruhrarea

Photo: Christer Agren

European strategy seminar on acid rain

On the invitation of Stichting Natuur en Milieu (Netherlands) and the European Environmental Bureau 25 environmentalists from Western Europe's leading environmental organizations met near London March 15-17, 1985.

The participants reviewed the considerable range of international legal instruments already available to governments for the control of acid rain and condemned the failure of all European governments to make sufficient use of these existing opportunities for international action.

They adopted a common strategy for future action by Europe's environmental organizations based on the following key elements:

1. A concentration of efforts on *the main issues* in the acid rain debate, in particular the SO₂, NO_x and O₃ questions and the avoidance of diversion into the consideration of less critically important pollutants.

2. The need to *encourage* those industries in Europe engaged in the production and sale of pollution abatement technologies and to strengthen alliance with other key economic and social interests.

3. The rejection of the argument that *nuclear power* can be either an effective or an acceptable instrument in the prevention of acid rain.

4. The development of a more coordinated agenda for further research into the causes and effects of acid rain based on environmental priorities.

The meeting also sent an urgent statement of their joint concern to the British Minister of the Environment. The statement was as follows:

European Greens confront British Government "You are blocking acid rain progress"

There is now profound concern in many European countries at the intolerable delays in mounting concerted Community action against Acid Rain.

We are aware of the British Government's position in relation to the European Commission's present proposals — and we are at a loss to understand it. It appears to contain a fundamental contradiction.

On the one hand, by supporting the broad aims of the "30-per-cent Club", the UK Government clearly recognizes the seriousness of the Acid Rain problem.

Furthermore, our difficulty in understanding is compounded by the British Government's failure to propose any constructive alternatives to the measures proposed by the Commission.

These points oblige us to construe the British Government's attitude in the worst possible light — as a refusal, in the face of overwhelming evidence, to act in the common European interest on a matter of urgent international concern.

On the other hand, by refusing to act now, in concert with other European countries, it is blocking *all* Community action.

This amounts to the British Government saying, "There is a problem, but as we are not prepared to act now, nobody else in Europe shall either".

New publications

Audiovisual program: "Acid Rain — The Silent Crisis"

By Conservation Education Services Ltd, 1985. 40-slide pack version: 3.95 pounds, Cassette: 3.00 pounds. Plus post and packing at cost. All with illustrated notes. Can be ordered from: International Centre for Conservation Education Greenfield House, Guiting Power, Glos. G154 5TZ, England.

Acid Rain and Transported Air Pollutants

Implication for Public Policy, 1984, 35 pages. Summary can be ordered from Congress of the United States, Office of Technology Assessment, Washington, DC 20510

Pollution Across Borders

Acid Rain — Acid Diplomacy. Proceedings of a conference, 1984, 72 pages. Edited by Prof. John E. Carroll, University of New Hampshire, Durham, N.H. 03824, USA

Död eller levande — en bok om Skogsdöden.

By B. Nielsen, H. Pleijel, J-E. Svensson, 1985, 157 pages. Price 75 kronor. Can be ordered from Miljöförbundet, c/o Bokskogen, Box 7048, 402 31 Göteborg, Sweden

Zure Regen — kwaadaadige bedreigning van ons welzij

By Gerben Poortinga, 1984, 272 pages. Price 25 guilders. Published by Elsevier, Amsterdam/Brussels. Can be ordered from the author, G. Poortinga, Gredend 29, NL-9967 P2 Eenrum, Netherlands

Zure regen — Zelf schade herkennen aan bomen

By F. Distelbrink, J. Hartog, C. Schulte, W. Oomen, 1985, 37 pages. Can be ordered from WISE, Postbus 5627, 1007 AP, Amsterdam, Netherlands

WEST GERMANY

Film festival for the envi- ronment

They do indeed make films for the environment in Europe — as was evident from the Third European Environmental Film Festival that was staged in Dortmund April 12-17. Maybe the quality was not always perfect, but quite a lot of good films were presented. Most of them were documentaries and reportages, but there were also some with artistic aims.

The festival, which was organized by the European Cultural Foundation, with the support of various other European institutions, opened with the Norwegian "A warning on water" by Sten-Rune Sterner: an original film with little clay men in different settings, which illustrated our relationship to water, with accompanying commentary.

Film-makers from 18 European countries participated. Sweden contributed with two films by Bo Landin and Hans Östbom, "Acid Rain — Who Cares?" and "A forest which is not" (on current Swedish forestry practices). The former is a story about the

Swedish boy Andreas who is trying to persuade his friend Camilla in London to do something about the problems of acid rain.*

Another Norwegian film, "Mo sami valdet" (The taking of Samiland) by John Trygve Solbakk and Karen Sørensen, about the Sami people and the struggle in Alta, was a favourite with the audience.

Among the many German films was "A fisherman's fight against the chemical giant" by Felix Kuballa, about dumpings in the North Sea of diluted acid effluents from chemical industries. The hero ended up as a MP candidate for the Green Party, after being just one who was fed up with catching diseased fish that were no longer fit for food. "Dioxin is everywhere" by Bernhard Kliebhan was also a well produced, informative film on the threat posed by dioxin.



"Schwarzwald ade?" by Hartmut Schoen, which received an award, gave a summary of the forest situation. The people of the Black Forest spoke from their hearts in some very fine interviews.

British television productions held a prime position during the festival. Yorkshire Television received the Grand Prix for its film "Windscale — the nuclear laundry" by James Cuttler, while Central Television's "What goes up must come down" was given the award for the best educational film. The latter is about acid rain and is produced by ECO project, a team that broadcasts a series of environmental programs every fourth Thursday.

The jury's comments on the industrial films, i.e. those produced by business firms, were fitting. The film that won the prize in this class was about biological methods for fighting insects in forestry and agriculture, produced by BASF. The jury thought this was the only film worthy of consideration, since all the other seven films that were presented lacked the necessary insight into ecological problems.

As a representative of the NGO Secretariat, spreading information from Scandinavia, I was able to make a lot of interesting contacts. Our exhibits and video showings attracted a large audience during the festival.

Other environmental organizations such as Greenpeace, BUND and FoE France also had information stands.

During the festival a European Forum was organized on the theme "New technologies — clean industry?" Guided bus tours in the Ruhr area and smaller discussion groups were also included in the program, as well as a podium discussion with German politicians, and art exhibitions.

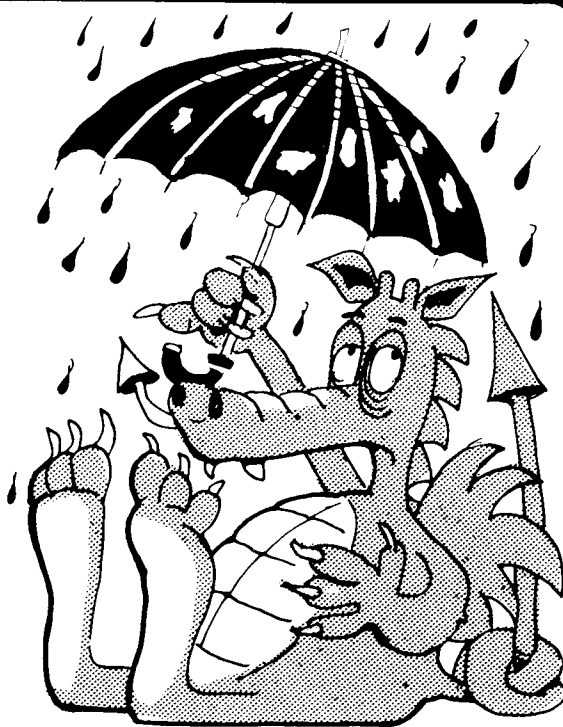
Maybe next time the festival will take place in England...?

Henry Kenamets

* Note: "Acid Rain — Who Cares?" by Bo Landin and Hans Östbom (also in a German version, entitled "Saurer Regen — die Spitze eines Eisbergs") can be purchased from the National Swedish Environmental Protection Board, Information Section, P O Box 1302, S-171 25 Solna, Sweden. 16 mm film or VHS cassette. It can also be borrowed from the Swedish embassies in London and Bonn.

**STOP
ACID
RAIN**

**WALES
FRIENDS
OF THE
EARTH**



Save the forests

Fourteen youth organizations in Sweden, comprising over 150,000 members, have started a coordinated campaign aimed at saving Europe's forests. The initiators were two organizations supporting the Swedish NGO Secretariat on Acid Rain — the Swedish Youth Association for Environmental Studies and Conservation, and the Environmental Federation — and the campaign is backed by all the political youth organization except one, the Conservative Youth.

Appeal by Swedish Youth Organizations

We who are now young, and expect to live until well into the 21st century, are profoundly disturbed. Political and economic powers are threatening the very basis of our existence. Forests are being damaged and ravaged, waters are being poisoned.

Forest death is spreading like a plague over Europe. It is no longer a matter of local damage around some major sources of pollution, but a widespread phenomenon. The causes are primarily:

- Emissions of sulphur from power plants and heating installations.
- The sulphur and hydrocarbons emitted from industrial processes.
- Nitrogen oxides and hydrocarbons from a proliferation of road vehicles.

Forestry also contributes to the general devastation by exploiting sensitive areas — as is now happening in the last continuous belt of virgin forest in Europe, in the mountainous region along the Norwegian-Swedish border. Extensive felling here, close to the tree-line, would moreover put an end to the Lapps' traditional way of life.

The forest in the developing countries, one of the world's most valuable natural resources, are also threatened. Extensive felling of trees in the tropics is leading to the spread of deserts, erosion, global changes of climate, and a general diminution of species.

Accelerated ravaging of the forests in the third world will have a catastrophic effect on the conditions of human life. Half of the world's rain forest will be gone within twenty years if transnational corporations are allowed to continue operations at their present rate.

Two billion hectares daily are on the point of becoming desert. Transnational companies lay hands on the most fertile areas for crops that can be exported, thus forcing large sections of the population to overexploit poorer and more easily damaged land.

These destructive forces could be counteracted, although the way will not be easy. The tendency at present is to push environmental solutions far into the future, when it will be too late to repair the damage. Different environmental interests may also be set against to each other. In wealthy nations the powers that be can be forced by popular opinion to take some care; but then the transnational companies intensify their operations in poorer countries where opinion is not so easily mobilized.

The required measures are thus so comprehensive that they can only be brought about through a massive arousing of opinion. Each individual must be encouraged to take a stand for a way of life that is calculated to conserve resources — whether by thriftier use of paper products, supporting projects for planting trees in developing countries, boycotting transnational corporations which clear the rain forest in order to raise cattle for making hamburgers, or simply taking the train instead of driving by car.

Gaining the necessary strength

for this will require widespread collaboration between popular movements. Effort will have to be coordinated at all levels, national and local. Europe must set an example and bring about cooperation with corresponding organizations in other parts of the world. The forests cannot be saved without policies for economic development that take into consideration the needs of the poor and oppressed. Aid aimed at developing rural resources should for example be carried out through cooperation between popular movements in Europe and the third world.

The economic means must be available for stopping the worldwide devastation of the forests, when half of the world's scientists are engaged in weapon development, and enormous sums are being spent on armaments. By opposing oppression wherever it may be found, and working to switch resources to types of production that will be of benefit to the majority, a world community can be developed that is both conservationist and considerate of the general interest.

We need an alliance of the forces that will be working to bring about such a community. Only so can we achieve a worldwide popular movement that will be able to ensure those measures that are immediately necessary, as well as a long-term economizing of world resources.

As a baseplate for such activity one might take the following demands,

- A massive, immediate reduction of emissions from power plants, heating installations, factories, and road vehicles.
- Economizing with energy and natural resources.
- A long-term conservationist policy for agriculture and forestry, both in Europe and elsewhere.
- Elimination of the threat to forests near the tree-line.
- Stop to the ravaging of the rain forests.