

Acid News

No. 4, October 1985

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



ECE CONVENTION

Nations accept binding agreement

Last July the Executive Body of the ECE Convention on Long-Range Transboundary Air Pollution held its third session, this time in Helsinki. The Convention was agreed in 1979 and signed by thirty-five countries. After subsequent ratification by twenty-four of the signatories, it came into force on March 16, 1979, and by the time of the Helsinki meeting the process of ratification had been completed by

seven more countries.

One of the weaknesses of the Convention had been that it did not involve any binding agreement. It had only required an undertaking on the part of the signatories to prepare to reduce emissions of air pollutants. (Acid News 3/85.)

At Helsinki a so-called Protocol was therefore presented, which included "a binding commitment for the contracting parties to spe-

cific action to reduce their national sulphur emission or their transboundary fluxes by 30 per cent, no later than 1993, using 1980 as a basis for calculation." This Protocol was adopted and signed by twenty-one of the original thirty-five signatories (see Table). Since Byelorussia and Ukraine are parts of the USSR, the commitment was actually made by eighteen European

continued on page 2



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.

Address:

The Swedish NGO Secretariat on Acid Rain
c/o Miljövard
Vallgatan 22
S-411 16 GÖTEBORG SWEDEN

Telephone: 031-13 12 97

Editor: Christer Ågren

Published by: The Swedish Society for the

Conservation of Nature

Printed by: Williamssons Offset, Solna

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)

Address:

The Stop Acid Rain Campaign/Norway
P.O. Box 8263, Hammersborg
N-OSLO 1 NORWAY

Telephone: 02-42 08 75

"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!



ISSN 0281-5087

countries plus Canada. Several of these countries had however already undertaken to reduce their emissions by more than required in the Protocol (see Table).

A way is now being sought for setting up a similar protocol to cover emissions of nitrogen oxides.

All but three

Three of the main polluters — the United Kingdom, USA, and Poland — are however steadfastly refusing to participate even in these modest measures. This appears all the more remarkable if one considers that officially they support the general aims of the 30-per-cent club, as well as admitting the seriousness of the problems of air pollution and acidification. But by refusing to act now, they are blocking any improvement in the situation, either at home or abroad.

Besides being a great emitter, Poland is one of Europe's worst sufferers from acidification. There is accelerating forest decline, and all around the centres of heavy industry in south Poland there are acute health problems, and the country's great heritage of historic buildings is crumbling away. No one, not even among the authorities, questions the need for action. The chief obstacle is the state of the country's economy. The Polish delegate at Helsinki also stressed the need for an increased exchange of technological know-how for emission control.

Environmental damage is also considerable both in Britain and the United States and these countries have the technology as well as the resources for dealing with the problem. Here the obstacle seems to be a lack of political will to do anything about it — despite growing public opposition to the governments' attitude.

Ashamed

The Friends of the Earth representative, Chris Rose, expressed dismay at the way his government was acting, saying he felt ashamed to be British when his

country refused to sign the Protocol. He continued: "We export twenty-seven times more airborne sulphur than we import. Our government is also casting a blind eye on the fact that we have damage in Britain too. Some sixty lakes, for instance, are already badly affected by acidification, and in the southeastern parts of the country forest decline is widespread."

Besides Chris Rose, representatives of various other environmental organizations, national and international, were present at the meeting. These included Friends of the Earth International, Greenpeace International, World Wildlife Fund UK, the Swedish NGO Secretariat on Acid Rain, as well as Finnish and Dutch organizations. Information material was distributed to the delegates as well as to journalists, several press releases were issued, an alternative press conference was held, and a demonstration carried out, only to mention the highlights.

Food for thought

Among the items presented at the environmentalists' press conference was the newly instituted International Air Pollution Network (Acid News 3/85). A resume was also given of the various internationally coordinated actions that are being organized, such as the tourist boycott of the United Kingdom, and the International Acid Rain Week.

The journalists were also treated to a review of the situation as regards air pollution and acidification in the British Isles, the United States, and Poland. The environmentalists urged closer east-west cooperation in the war on pollution, and called on the Western nations to make the necessary technology more readily available, in order to hasten a reduction of emissions from Eastern Europe. In closing, it was shown that if the damage to the environment was to be stopped, it would be necessary to reduce emissions of sulphur and nitrogen oxides by at least 75 per cent.

Christer Ågren

Convention on Long-Range Transboundary Air Pollution

The Convention on Long-Range Transboundary Air Pollution was adopted at the High-level Meeting within the Framework of the ECE on the Protection of the Environment. Held at Geneva from 13-15 November 1979, the Meeting was attended by representatives from 33 of the 34 member states of the Economic Commission for Europe.

The Convention elaborates fundamental principles for protecting people and the environment against air pollution. It has detailed provisions on such matters as the exchange of information, consultations, research and monitoring. Under the Convention, the Contracting Parties undertake to develop, without undue delay, policies and strategies for com-

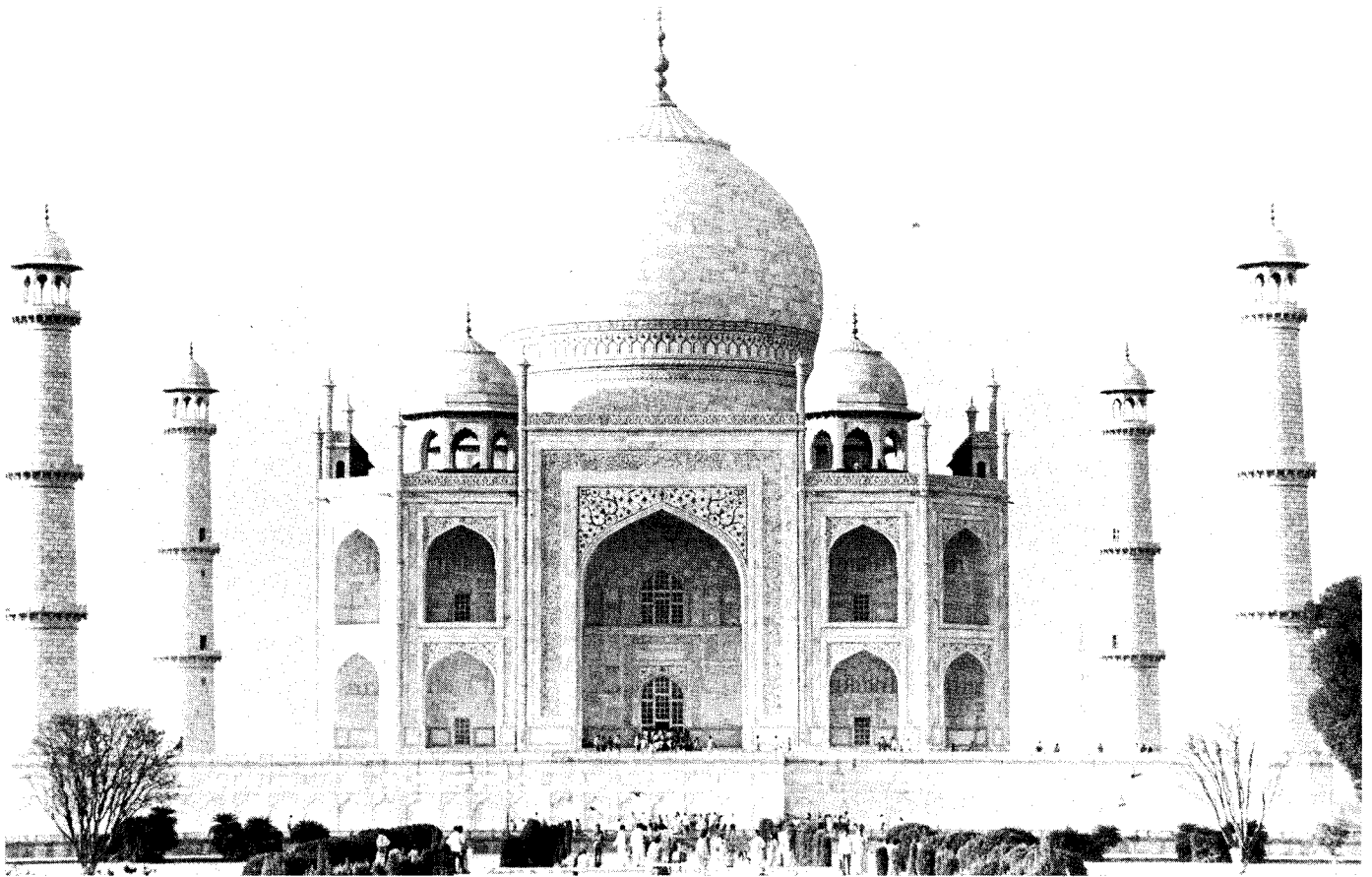
bating the discharge of air pollutants, using the best available technology. It emphasizes the implementation and further development of the Co-operative Programme for the Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP). The Convention entered into force on March 16, 1983.

Signatory	Date of ratification	Date of accession to the 30-per-cent club	Promised reductions of SO ₂ , from 1980
Austria	Dec 1982	June 1983	50% by 1995
Belgium	July 1982	June 1984	50% by 1995
Bulgaria	June 1981	June 1984	30% by 1993
Byelorussian SSR	June 1980	June 1984	30% by 1993
Canada	Dec 1981	June 1983	50% by 1994
Czechoslovakia	Dec 1983	Sept 1984	30% by 1993
Denmark	June 1982	June 1983	50% by 1995
Fed. Rep. Germany	July 1982	June 1983	60% by 1993
Finland	April 1981	June 1983	50% by 1995
France	Nov 1981	March 1984	50% by 1990
German Dem. Rep.	June 1982	June 1984	30% by 1993
Greece	Aug 1983		
Holy See			
Hungary	Sept 1980	April 1985	30% by 1993
Iceland	May 1983		
Ireland	July 1982		
Italy	July 1982	Sept 1984	30% by 1993
Liechtenstein	Nov 1983	June 1984	30% by 1993
Luxembourg	July 1982	June 1984	30% by 1993
Netherlands	July 1982	March 1984	40% by 1995
Norway	Feb 1981	June 1983	50% by 1994
Poland	March 1985		
Portugal	Sept 1980		
Romania			
San Marino			
Spain	June 1982		
Sweden	Feb 1981	June 1983	65% by 1995
Switzerland	May 1983	June 1983	30% by 1995
Turkey	April 1983		
Ukrainian SSR	June 1980	June 1984	30% by 1993
USSR	May 1980	June 1984	30% by 1993
United Kingdom	July 1982		
USA	Nov 1981		
Yugoslavia			
EEC	July 1982		

NOTE: Change of address

The Swedish NGO Secretariat has moved to Gothenburg, and the address is now:
 c/o Miljövärd
 Vallgatan 22
 S-411 16 Göteborg, Sweden
 Phone: 031-13 12 97
 Otherwise there will be no change, Christer Ågren still remaining as coordinator.

Rising threat of acid pollution



Taj Mahal threatened by air pollution. Photo: Peter Hanneberg

"Acid rain" and "Third World" don't often crop up in the same sentence. For most people, acid pollution follows in the wake of the kind of heavy industry that only Europe and North America have in any quantity. But it needs little to produce acid pollution — a pocket of heavy industry or a large city can be enough. As a result, acid pollution is a real or potential danger in at least fourteen Third World countries, and probably many more.

The Third World consumes only a fifth of the world's commercial energy, but half of that consumption is concentrated in just four countries: China, India, Brazil and Mexico. As the Third World develops a wider industrial base, the share of heavy industry in manufacturing output could expand. But few develop-

ing countries will be able to afford the added expense of emission control technology. Added to increased commercial energy consumption, it could mean more pollution.

China faces greater risks of acid pollution than any other Third World country. With annual estimated emissions of 12 million tons, it is the third largest SO₂ producer in the world. If production increases as projected, SO₂ emissions could reach 18 million tons per year by the end of the century — more than in the entire European Community.

Hazy winter days are already common in northern Chinese cities. Air pollution is thought to cause an annual loss of more than 3.5 million working days, and 6,000 premature deaths (mainly among newborn babies

and elderly people with chronic heart or lung diseases). In 1983, it was reported that Beijing rain-water was slightly acid (pH 5.0-5.5). Shanghai recorded its first acid rainstorm in September 1981. Southern parts of China are likely to be at high risk from soil and water acidification; soils and surface waters, especially south of the Yangtze River, are generally acidic and the soils are poorly buffered.

India. Here annual SO₂ emissions tripled from the early 1960s to reach 3.2 million tons in 1979. They could reach seven million tons by the end of the decade. Air pollution is already severe in cities such as Calcutta, Bombay and Delhi, and there is serious concern for the future of the Taj Mahal, situated downwind of a major oil refinery. ►

Brazil. Air pollution is now normal in most Brazilian cities. The most heavily industrialized areas are in the southeastern states. Soil samples from eastern Sao Paulo state have shown very low pH values (3.7-4.7). Cubatao, near Sao Paulo, may be the most polluted city in the world, rivalled only by the industrial centres of Poland and Czechoslovakia. Thirty-three factories — which have no emission controls — daily emit 1,000 tons of SO₂, NO_x, CO, hydrocarbons and dust. Fish, trees, and wildlife are dying, and human health is suffering.

Mexico. Mexico City is also heavily polluted — so much so that in October 1984 the mayor warned of "collective hysteria" unless dramatic controlling measures were taken. The city's position in a valley surrounded by mountains creates a temperature inversion in the hot months of February to May which combines with heavy city traffic to produce a brown, noxious smog, reducing visibility to three or four city blocks. Breathing the air is said to be like smoking two packets of cigarettes a day.

Mexico's SO₂ emissions could cause a major rift with the United States, itself often criticized for exporting pollution to Canada. A huge new copper smelter in northern Mexico, due to be opened in the next few months, could become the second biggest single emitter of sulphur in North America. Combined with emissions from other smelters, it could increase acid pollution damage in the Rocky Mountains.

Africa. Pockets of industry have even brought localized acid pol-

lution to Africa. *South Africa* generates about a million tons of SO₂ per year (as much as Spain). About 80 per cent of its coal is burned within 200 km of the industrial heartland of the Witwatersrand (around Johannesburg). Stable atmospheric conditions mean that, in winter particularly, 80 per cent of the air pollutants will stay within an area of 3,000 square kilometres. The first signs of corrosion to buildings in Johannesburg have been reported, and archaeologists report that centuries-old rock engravings and Iron Age relics are suffering damage.

The concentration of copper smelting and refining in northern *Zambia* has produced dry acid deposition. Copper ores contain a high proportion of sulphur, and the smelting process emits about 1,250 tons of SO₂ per day. Some is recovered to produce sulphuric acid, but the rest could pose a hazard to the freshwater fishing industry, agriculture, and forestry.

Vehicles and cities

One of the most common sources of Third World air pollution is road traffic. NO_x and ozone levels are already critical around major cities with heavy traffic, and are likely to become much worse as urban populations grow. In 1950, 17 per cent of the Third World's population lived in cities; by the year 2000 the figure could be nearly 44 per cent. In 1980, eight of the world's 15 largest cities were in the Third World. They included Mexico City, Sao Paulo, Shanghai, Beijing and Rio de Janeiro. The ef-

fect of rapid traffic build-up in most major *SE Asian cities* is made worse by still and stable air conditions — providing little ventilation and creating ideal conditions for the build-up of air pollutants — as well as by badly maintained vehicle engines.

Vegetation

Tropical vegetation is probably more sensitive to the acidification of soil and water, and the leakage of nutrients and metals, than much of the vegetation of temperate climates. In the tropics most vegetation must endure extreme climatic variation, subjecting it to much natural stress. A heavy input of pollutants would be an additional strain.

A lack of research makes it difficult to be sure of the full potential for Third World acid pollution, but this could change with the results of a joint UNEP/SCOPE project launched last year. It will look at acidification in tropical countries, assess the potential for acid pollution if SO₂ and NO_x emissions increase, identify susceptible soils and ecosystems, and look into monitoring programs. Countries that may be studied include Brazil, Mexico, Venezuela, India, Malaysia, China, Kenya, and Nigeria. Its results could put a whole new complexion on our perception of the global implications of acid pollution.

John McCormick
Earthscan

*Article drawn from the Earthscan paperback
"Acid earth: The global threat of acid pollution."*

Girls in timely protest

Three women volunteers from the international environment group Greenpeace on July 9 climbed the 380-foot-high crane at the Drax power station in North Yorkshire. The action was a protest against the building of what will, unless fitted with cleaning devices, be the most grossly polluting power station in western Europe. A banner reading "Stop Acid Rain —

Greenpeace" was suspended from the main arm of the giant crane, but was later cut down by workmen who also interfered with and cut the women's safety ropes.

When the power station is completed in January 1986, its annual discharge of sulphur dioxide will be 400,000 tons, which is more, for example, than the total emissions from Sweden

(approximately 300,000 tons of SO₂ in 1983). Pollution on this scale is almost impossible to imagine: The amount of sulphur in 400,000 tons of sulphur dioxide is 200,000 tons, or equivalent to 20,000 World War aircraft, each carrying a ten-ton bomb of sulphur targetted on Europe each year!

EC limits far too lenient

On June 4, 1985 the European Commission adopted detailed proposals for stricter emission standards for motor vehicles.

The Commission described its proposals as: *"ensuring a further substantial cutback in emission levels for all categories of cars over the next few years,"* and as *"making a major contribution to a cleaner European environment"*.

The Commission also estimated that its proposals, *"when applying to the whole Community vehicle fleet, would cut emissions of nitrogen oxides, the most damaging pollutants, by some 50 per cent, from 3 million tons to 1.5 million tons. In Germany such emissions would be more than halved... Substantial reductions would also be achieved for other exhaust gases."*

On June 10, 1985 the European Environmental Bureau (EEB), the Brussels-based coalition of over 60 European non-governmental organizations in the field of the environment from the ten member-states of the Community, issued the following press-release:

"On June 25, the Council of Environment Ministers will discuss the standards for petrol-fueled motorcars with a cylinder volume of more than 1.4 litres. "The European Environmental Bureau has always maintained that these standards should at least be equivalent to current US standards. Dr Michael P Walsh, a well-known US expert on automotive emissions, has calculated such equivalent standards, on the basis of measurements taken on 30 different makes of cars, falling within this category. According to his calculations, emis-

sions in the European driving test cycle for petrol-fueled cars, with a cylinder volume over 1.4 litres, should not exceed the following values per test-run:

nitrogen oxides (NO_x) 2.4 gms
hydrocarbons (HC) 2.2 gms
carbon monox. (CO) 16.0 gms

As shown in Table 1, the standards proposed by the European Commission are far too lenient (about one and a half times too lenient for the cars over 2 litres, and about twice too lenient for the cars between 1.4 and 2 litres) compared with the standards calculated by Dr Walsh.

"The EEB therefore considers the standards proposed by the European Commission to be totally inadequate, and urges the Council of Ministers to adopt the standards calculated by Dr Walsh, as a sincere translation of "the equivalent effect of the US standards on the European environment" (the formula adopted by the Environment Council on March 21). The EEB would also like to point out that the Commission proposals for medium-sized cars (1.4-2.0 litres) are also too lenient if one considers what would reasonably be achievable in the future with lean-burn engines — especially if efficient oxidation catalysts are used, and if there is a closed loop-sensor guiding lean-burning. Emissions from medium-sized cars with lean-burn engines could then be much lower than the ones proposed by the European Commission. With such provisions, emissions from cars would, in all probability, not exceed the standards calculated by Dr Walsh as being equivalent to the US standards."

Expert's judgment

Dr Michael P Walsh clearly demonstrates that the Commission proposals will not lead to a 50-per-cent reduction of NO_x emissions from cars by the year 2010, but only to a reduction of 39 per cent. For HC and CO, the figures for reduction would only be 24.4 per cent and 22.8 per cent by 2010. If, however, true US equivalent standards were to be applied all over Europe, the reduction figures would be: CO 66.7 per cent, HC 75 per cent, NO_x 76.7 per cent.

The further conclusions of his papers are:

1. The delayed implementation of US equivalent standards decided by the Environmental Ministers on March 20 will result in significantly more pollution in the short term than would be the case if US type emissions standards were applied to all cars starting in 1989. For example, in Europe as a whole, 5 million more tons of NO_x, 4.5 million of HC, and 27.8 million of CO will be emitted by cars between now and 1995.

2. If on the other hand standards truly "equivalent" to US standards are adopted by the Ministers, over the longer term the excess emissions can be reduced and eventually eliminated. For example, in Europe as a whole, in 1995 the excess annual tonnage of NO_x, HC, and CO will be about 700,000, 600,000 and 4 million tons respectively. By the year 2000, the excess tonnage will be reduced to 470,000, 426,000 and 2 million, and by 2006 virtually all cars will be at the US type standards. ►

Table 1: Standards in grams per European test-cycle for petrol-fueled cars over 1.4 litres

Substance	Proposed by the European Commission for cars with cylinders over 2.0 litres	Proposed by the European Commission for cars with cylinders between 1.4 and 2.0 litres	Standards calculated by Dr Michael P Walsh as being equivalent to US standards
CO	25	30	16
HC + NO _x	6.5	8	4.6
NO _x	3.5	4	2.4

3. If relaxed standards, however, as recommended by the Commission, are adopted by the Ministers, Europe will be condemned to significantly more pollution, both short term and long term. By the time the entire fleet is converted to the new standards, NO_x and HC emissions will be almost three times higher than the US equivalent levels, and CO almost 2.5 times higher.

4. Even these estimates are optimistic. They assume, for example, that all member countries will implement the Common Market standards, when, in fact, the standards are permissive — any country can choose not to require the more stringent standards. There have been some indications that the UK, for example, will not adopt the tighter standards.

In addition, no vehicle growth was assumed, which will certainly not be the case. Historical vehicle growth rates in Europe could virtually eliminate any emissions reductions if only the relaxed standards are adopted.

The analysis also ignores the deficiencies in the current compliance program in Common Market countries compared to other countries. For example, compliance is based solely on type approval of low-mileage prototype vehicles rather than on high-mileage in-use cars which are those which truly affect the air quality. Conformity of Production programs such as those underway in Sweden and Switzerland are not specified for the

Common Market.

5. Retention of the ECE driving cycle is unfortunate, since as noted by the UK House of Lords in their recent report, "the drive cycle currently used in Europe for testing new cars takes little account of modern driving conditions and practice. It is therefore probable that the test results bear little relationship to the levels of in-service emissions from vehicles. The Committee therefore considers that the US Federal test cycle should be adopted for use in Europe, with appropriate modifications to suit European conditions."

The standards selected will determine the success or failure of the entire pollution control effort for Europe over the remainder of this century and into the next. The Ministers announced their intention that these standards should be "equivalent" to those already implemented in the US; failure to achieve this objective by adopting less stringent standards will condemn Europe to more dirty air, more dying forests and dead lakes, and more illness in cities.

EEB

Vautierstraat 31
1040 Brussels
Belgium

Note:

Dr Michael P Walsh, former Deputy Assistant Administrator for Mobile Source Air Pollution Control, US Environmental Protection Agency (1978-1981), and now a well-known consultant in the motor vehicle pollution control area, has prepared the following two reports, referred to by the EEB:

"Emission Standards for Europe" (April 19, 1985)

"The Impact of Relaxed Standards on Europe's Environment" (June 7, 1985)

Conferences

European Youth Forest Action

November 1-2, 1985, Leobersdorf, near Vienna, Austria

An international conference to prepare for the 1986 European Forest Tour. Participants are environmentally concerned representatives from youth organizations all over Europe. More information is available from: Michael Undorf, Obersteiner-gasse 11/2/3, 1190 Wien, Austria. Phone: 222-346518

Acid Rain and the European Economy

October 28-31, 1985, Strasbourg, France

An international symposium of experts and individuals in charge of the natural and historical heritage, for the exchange of ideas and experience. Participants include scientists and technicians, industrialists, local and municipal councillors, national and international representatives, consumers, foresters and agronomists, and administrators.

The symposium has been organized by the Council of Europe, together with a number of other authorities and organizations. More information is available from: Est-Environnement/Cif-fen, 55 avenue d'Alsace, F-68000 Colmar, France.

Liming Acidic Waters: Environmental and Policy Concerns

October 30-31, Albany, U.S.A.

For more information, contact: Acid Rain Information Clearing House, Center for Environmental Information, 33 S. Washington St., Rochester, NY 14608, U.S.A.

Result of the EC Environment Council meeting, June 27-28 in Luxembourg.

The Commission, the Council and the member states shall be bound, each to the extent to which it is concerned, to take the following measures:

Future European emission standards will be: ► ► ► ► ►

However, there were no full agreement, because only eight out of ten ministers agreed. The UK kept a reserve "ad referendum" and Denmark has a full reserve.

Category of vehicles	Dates of implementation (new models/new cars)	Emission norms (grams/test)
More than 2 litres	1.10.1988/1989	CO: 25 HC + NO _x : 6.5 NO _x : 3.5
1.4 to 2 litres	1.10.1991/1993	CO: 30 HC + NO _x : 8
Less than 1.4 litres	A. 1.10.1990/1991 B. The European standard and the date of its implementation will be decided in 1987 and the date of implementation will not be later than 1992/1993	CO: 45 HC + NO _x : 15 NO _x : 6

Tree dieback: new survey

In August Friends of the Earth launched the first national survey of acid rain dieback in native British trees. Three thousand illustrated action packs based on FoE's researches in the UK, and on advice and information from continental ecologists, are being sent to naturalists, tree experts, conservation scientists, and to anyone requesting them. Last week, observations by Swedish forest ecologist Dr Bengt Nihlgård confirmed fears that many British woods and trees show the same signs of air pollution damage as in Europe (detail below). Friends of the Earth obtained a grant of 8,000 pounds from the UK World Wildlife Fund to run the survey which concentrates on dieback in yew and beech trees, because environment groups believe official denials of damage based on young forestry plantations, have overlooked widespread dieback in older native trees in woods and hedgerows.

Species picked

The results of FoE's urgent survey should be published in October. Acid Rain Campaigner Chris Rose says: *"Once trees show visible symptoms of dieback you know that pollution stress is far advanced — it is a sign of the end of a decline, not the beginning. We were therefore alarmed when churchyard yews began shedding yellow needles earlier this year, and after visits to Holland we realized that crown dieback in Britain's beech trees had been long overlooked. The question now is, how much damage is there, and where? To lose yew and beech would be worse than the losses from Dutch elm disease. These species are not just important parts of our ecology and heritage: there are also scientific reasons to think they are good acid rain indicators."*

Yew is Britain's equivalent of the native spruce and fir forests of Europe. It is ecologically similar to beech and both are long-established natives that are toler-

ant of the British climate. Yew shows "tinsel syndrome", the yellowing and browning characteristic of acid rain damage in conifers. Beech develops "cluster twigs" due to reduced crown growth, small chlorotic (pale yellow) leaves, and drops green leaves early. Both have other symptoms too.

Ultimately trees die. Advanced

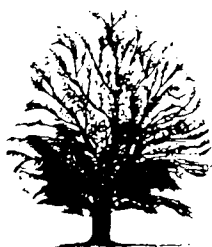
BEECH



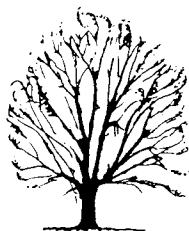
Stage 1
(normal)



Stage 2
(partial dieback)



Stage 3
(advanced dieback)



Stage 4
(complete dieback)

damage has already been identified at sites in parts of Wales and in the south, southeast and midlands of England.

What expert saw

Bengt Nihlgård, Assistant Professor and forest ecologist at Lund University in South Sweden, was recently flown to Britain by Friends of the Earth. Professor Nihlgård is an expert on beech damage, which he has studied in Germany, Czechoslovakia, South Sweden and elsewhere. In general he found damage to deciduous trees much worse in Britain than in Sweden, and similar to that in Central Europe. Sites visited include several of national conservation importance. (SSSI — Site of Special Scientific Interest.)

Open letter

Friends of the Earth have circulated an open letter from Bengt Nihlgård to top British scientists: it describes his observations of acid rain damage to 17 British tree species from eight counties.

The letter has been sent to the DoE Chief Scientist, Nature Conservancy Council Chief Scientist, Royal Commission on Environmental Pollution, Forestry Commission Research Director, the British Ecological Society, and others. It describes:

High (over 50 per cent) needle loss on Norway spruce and other conifers, comparable only with stands in South Sweden where there is a high local impact (of pollutants); the same yellowing and early needle loss in British yews as seen by Nihlgård in Czechoslovakia in June; chronic damage to oak only otherwise seen in Central Europe. *"Beech showed all the symptoms — almost everywhere — of damage reported from Central Europe and South Sweden — in one site suggesting damage developing over 20 years of acidification."*

The letter ends: *"Summing up I must say that the only place where I have seen correspondingly bad situations in Central Europe is ►*

around the biggest airports in West Germany. Not even in the Erzgebirge (a badly hit region of southern East Germany), where spruce is dying at a soil pH of about 2.2 and with very high sulphur dioxide episodes, have I seen similar damage to all the deciduous trees."

Complacency unwarranted

Friends of the Earth has today written to the recipients of the Nihlgård letter urging a coordinated urgent national survey of all tree species, on the German model. "It is clear that for some species, there is a crisis," says FoE's Chris Rose: "This is a time for joint action by Government Departments and Universities." Over 350 people have already volunteered to take part in Friends of the Earth's survey of beech and yew trees. "Beech trees showing acid rain symptoms can be seen

all over western and southern England and in Wales," says Chris Rose.

Friends of the Earth has had to spend over 1,500 pounds for translating key forestry and ecological texts into English from Dutch and German, believing that lack of information accounts for government inaction, complacency among foresters, and the overlooking of tree damage in Britain up to now. "Continental scientists have made rapid progress in studying the spreading problem of forest decline, but in Britain we've lagged behind," says Chris Rose. "Until you know what to look for, damage is ignored, missed, or put down to other causes. The 1976 drought for instance is held to have killed our beeches; but other species are also damaged. The hot '76 summer saw record ozone pollution (which exacerbates drought), and

stressed trees are also more drought and frost sensitive. It is wrong to try to disentangle natural and pollution stresses — in real life they act together. From what we already know of dieback in Britain, the situation appears serious. Certainly it does not warrant complacency on the part of the government."

Friends of the Earth will issue information as the survey proceeds. Discussions with the Institute for Terrestrial Ecology, the Forestry Commission, Nature Conservancy Council, and pollution scientists preceded the launch of the present study.

Appeal for help

Anyone willing to take part in the survey should write to Friends of the Earth, Tree Dieback Survey, 377 City Road, London, England EC1V 1NA.

Forestry Commission

The Forestry Commission's final report on the findings of its survey of tree damage in the United Kingdom was published on August 21. The following are the conclusions drawn by the Commission as a result of the survey:

"The 1984 survey of Sitka and Norway spruce and Scots pine in Great Britain has shown no evidence of any new form of forest damage. Stands in less than per-

fect health can be accounted for without invoking pollution damage. Nevertheless, only repeated surveys will show whether Britain has indeed escaped the blight that has descended on the forests of Central Europe."

Written by W.O. Binns, D.B. Redfern, K. Rennolls, and A.J.A. Betts, the report, entitled "Forest Health and Air Pollution — 1984 Survey," is No. 142 of the For-

estry Commission Research and Development Papers. It can be obtained from the Publications Officer, Forestry Commission Research Station, Alice Holt Lodge, Wrecclesham, Farnham, Surrey, England GU10 4LH. A preliminary report, which was published earlier this year, was commented on in Acid News 2/85, pp 6-7.

Making people aware

On Saturday, August 24, over 100 people attended a demonstration against the causes of acid rain, organized by Wales Friends of the Earth. The site chosen was the north shore of Llyn Brianne in Mid Wales, a place now acknowledged to be suffering badly from acidification.

The event was billed as "theatrical" and "light hearted", though its purpose was serious. Acid rain is now having a direct effect on the Welsh countryside. Mr Moc Morgan, spokesman for the Welsh Salmon and Trout Association, which joined Wales

FoE in the demonstration, claimed that until a few years ago this been the finest trout fishing area in Britain. Now there were no fish.

This alliance between an environmental group and a fishing association is felt to be unusual, giving further evidence of how the acidification of lakes and rivers is uniting differing bodies.

Supporters of FoE from all over Wales joined in the demonstration, many donning "fancy dress" for an amazing invasion of mermaids, deep sea divers, human power stations, "fishing

gnomes" and dragons into one of the most isolated regions of Wales.

Wales FoE were delighted at the number of people who attended the demonstration, and the coverage it received in the media. This well publicized excursion into the heart of acidified Wales is regarded as providing further proof of determination to bring the issue of acid rain to the attention of the British public.

Margaret Minhinick
Secretary Wales FoE

Acidity of rain plotted

"What a many-headed hydra this acid rain business is," commented a delegate at the end of the Acid Rain Inquiry organized by the Scottish Wildlife Trust in September 1984. Not long after this WATCH, the junior branch of the Royal Society for Nature Conservation, found itself grasping the hydra, heads and all, as it embarked on a major study of acid pollution in Britain.

A study of acid rain was ideally suited to WATCH which has a tradition of harnessing the energy and enthusiasm of children to collect valuable information on environmental pollution. Major water and air pollution surveys, which gave birth to the club in the 1970s, as well as the later seashore project and butterfly counts, have achieved scientific acceptability and a place in the literature.

In the event, the WATCH Acid Drops Project, as it was called, was a great success. In back gardens all over Britain, thousands of children and their families braved icy conditions on winter mornings to collect their rain-water samples. Acid Drops ran for four weeks from mid-January to mid-February 1985 and its aim was to fill a real gap in scientific knowledge about acid rain. Monitoring of rainfall acidity has been carried out for some years at a number of research stations in the British Isles. However, these are relatively few and far between, and before Acid Drops no one had collected enough information to study the precise pattern of rainfall acidity as one particular weather system passed across the country.

Educational tool

Another objective of the project was to devise a straightforward, easily repeatable method for monitoring acid rain using simple, readily obtainable equipment. There was the exciting possibility that a low technology

kit might not only be a valuable educational tool in this country but also have a useful role for acid rain monitoring in developing countries. In the planning stage, there was heated debate over the type of rainfall collector that should be used. The solution finally presented itself in the form of 2-litre plastic lemonade bottles, cut down to a suitable size. These were then to be mounted on stakes 1.5 metres from the ground away from overhanging trees and buildings. Acid Drops surveyors supplied their own lemonade bottles and stakes but the rest of the equipment came from WATCH.

The complete package contained polythene bags (to act as "sterile" liners for the lemonade bottle), special pH indicator sticks and colour charts, teaspoons to measure the volume of water, instructions, record sheets and "secret solutions." These solutions increased the fun of the kit but they also played a role in assessing the accuracy of the recorders' results. Samples were collected twice daily and tested, using the pH indicator sticks.

WATCH estimates that, counting school groups and families, about 8,000 people were involved in collecting the acid rain records. The results were analysed by Dr Neil Cape of the Institute of Terrestrial Ecology.

Pattern clear

Results from two of the survey days, January 15 and January 21, are shown on the maps, which are divided into 20 kilometre squares and shaded according to the level of acidity found. The darkest areas had the highest levels of acidity. Each map shows information from about 500 recording stations.

The maps are very different and they reflect, with remarkable precision, the prevailing weather conditions on those two days. On January 15, easterly winds

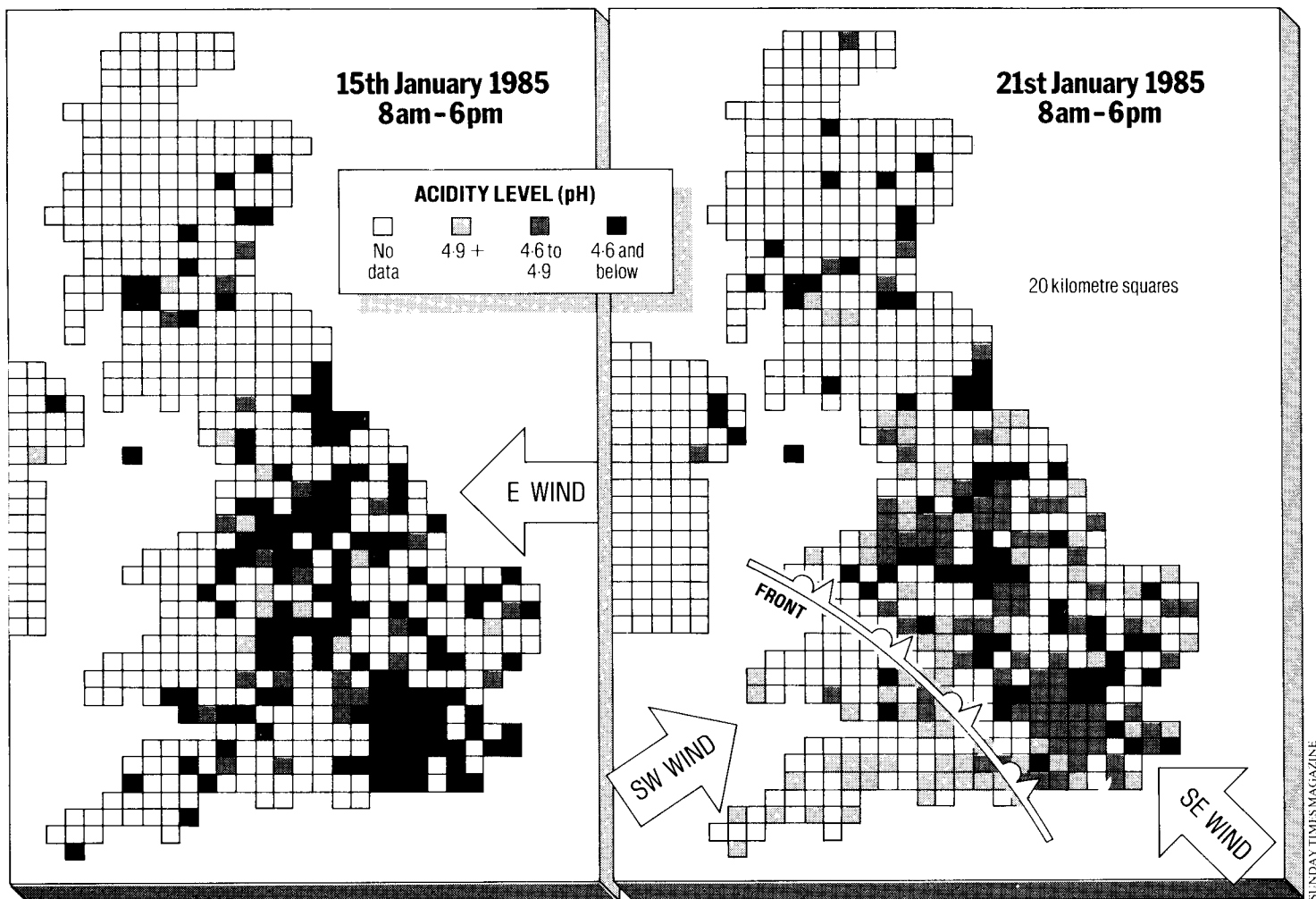
blowing from the continent brought cold wintry weather to the whole country. The winds came from stable, high pressure air which had travelled slowly over the continent at a time when power stations were on maximum load and would therefore have accumulated large amounts of nitrogen oxides and sulphur dioxide. In addition, most readings for January 15 were from snow samples; snowflakes the local effect of our own power stations and industries. To reveal more pollution. As a result the map from January 15 shows widespread acidity all over the country.

On January 21, however, the situation had begun to change. Winds from the Atlantic brought clean air to the south-west of Britain and the easterly air mass broke up as westerly winds pushed it away. The map shows this pattern quite clearly: the black squares for January 21 indicate areas still predominantly under the influence of the easterly air stream. The position of the weather front on January 21 coincides exactly with the boundary between "clean" rain (pH 5.5) to the south and west and acid rain to the north and east (pH below 4.6).

International problem

Acid Drops findings emphasize the international nature of the acid rain problem. The United Kingdom is known to export acid pollution to Northern Europe on the prevailing westerly winds, and it now appears that when winds are easterly we are on the receiving end.

It also seems that our results may support recent information from Scandinavia. Record levels of acidity were reported from snow that fell over East Norway last winter. Norwegian sources say that the snow was dirty grey in colour and clearly contaminated; the authorities assume ►



The maps show the results for two survey days; dirty rain came in from Europe, clean rain with the Atlantic westerlies.

that the pollution came from Central Europe.

The WATCH results show the influence of large scale air movements but they do not pick up the local effect of our own power stations and industries. To reveal local effect, the survey would have to be repeated on a county scale. This has been done in Greater Manchester by a group known as Impact, using similar methods and a report of its work is due to be published shortly.

That a lot of markedly acid rain fell over the British Isles last winter was also clearly shown. The nature of the pH sticks and the need to average the results for the maps meant that the very lowest results recorded are not shown. We do know however that, during the survey, the acidity fell below pH 4 in some parts of the country; pH 4 is the danger point for damage to wildlife and buildings.

WATCH is very pleased with the Acid Drops project. It pro-

duced useful and meaningful information and, equally important; focused attention on the acid rain problem. Teachers tell us that it has helped to bring real conservation issues alive, as well as introducing children to relatively complicated concepts like pH. We have been very impressed with the way that even quite young children, aged seven or eight, have coped with the demands of the survey. We believe that Acid Drops has helped children to understand the problem and to realize that positive steps can be taken to prevent it.

Acid Drops was planned as a pilot scheme and, using the experience gained last winter, together with generous sponsorship from British Petroleum, we are organizing an extended project for next year.

Trina Paskell
WATCH
22 The Green
Nettleham, Lincoln
England LN2 2NR



NATURAL WORLD

Number 14 Autumn 1985

The magazine of the
Royal Society for
Nature Conservation

Opposing the "Link"

Round Table of European Industrialists. — Will that be the name that future generations associate with the final victory of the motorcar and air pollution over the European forests?

Or will "Missing Links," as their scheme is entitled, be remembered as the threat that finally aroused Europeans, causing them to alter course and steer towards a future in which both men and trees will be able to breathe, in the widest sense of the word?

The Round Table is a gathering of the heads of twenty-two leading European business corporations, among which are Siemens and Thyssen, with Volvo's Pehr G Gyllenhammar as chairman. Missing Links, which is a proposal for a gigantic development of the European infrastructure, was first presented at the end of last year. Although it comprises railways as well, the real core of the scheme is a vastly extended system of motorways.

It was envisaged as being carried out over a period of twenty years, at a cost of 60 billion dollars. It would include a tunnel or bridge over the English Channel, further enormous tunnels under the Alps, and ultra-high-speed trains between some of the larger cities. A motorway, called the Scandinavian Link, would run from Lübeck to Oslo, with bridges to eliminate ferries across the Fehmarn Belt, the Great Belt and Öresund.

Threatened setback

It requires no feat of the imagination to grasp the effects on the environment of such a monstrous expansion of road traffic. The enormously increased emissions of nitrogen oxides and hydrocarbons would spell the death knell for the forests. Fitting catalytic converters would, in such circumstances, be like trying to bale a sinking boat with a teacup.

The announcement of Missing Links came just as the Swedish environmental organizations were

planning actions for the spring of 1985 against acidification and forest dieback. We thought we had enough to do in fighting for a reduction of today's emissions — when suddenly we were confronted with the threat of a gigantic increase, in combination with the development of a social structure which would, to say the least, be of doubtful value.

Last spring various attacks were in any case made on the proposal for a first stretch of the Scandinavian Link, north of Gothenburg, which was in process of becoming a fact. The idea of protesting against mass motorism and the Scandinavian Link took form during the International Acid Rain Week.

Counterattack

Early in August the Environmental Federation and the Swedish Youth Association for Environmental Studies and Conservation organized a study course on the Scandinavian Link and the proposal for a great intensification of transports, and also held an international seminar on Missing Links and the consequences thereof. Aptly named "Round Table of European Environmentalists," the seminar was attended by representatives from West Germany, Denmark, Norway, and Finland, as well as Sweden.

The representatives fashioned a joint document entitled "Vital Links," which comprised an assessment as well as a criticism of Missing Links. In it was also included a proposed alternative for a future of Europe. One of the ideas was to form a 75-per-cent club of those NGOs that wished to push for a 75-per-cent reduction of emissions of nitrogen and sulphur oxides and hydrocarbons. In the long term this would be an altogether realistic requirement if there is to be any real intention of checking acidification and forest decline (Acid News 3/85, pp 4-6).

The following are also among the points made in the Vital Links

document:

- A one-sided favouring of large-scale industry by providing enormously greater possibilities for transport movements would have unacceptable consequences both for the environment and society.
- The bulk of the necessary transport work should be performed by railways and shipping.
- The development of local public transportation systems should be favoured.

Organizing opposition

Immediately after the meeting an "Anti-Link Action" movement was set going, the initiators being the Environmental Federation, the Swedish Society for the Conservation of Nature, and the Swedish Youth Association for Environmental Studies and Conservation. The intention is that the organization so formed will gradually be extended to include all groups and individuals who wish to join the opposition to the Scandinavian Link. Simultaneously a secretariat was established, initially with a staff of two, and seat in Gothenburg. The secretariat will supply information and campaign material to anyone requesting it, as well as lending assistance in setting up local opposition cells.

We should be glad to hear from any groups or organizations that are either actively opposing or would like to start opposing parts of the Missing Links project, as well as the construction of motorways, bridges, and tunnels generally.

The industrialists of the Round Table have denoted their scheme a "vision." Let us ensure it stays as that — and show that there are others with truer visions.

Staffan Andersson
Anti-Link Action
Box 7048
S-402 31 Göteborg
Sweden
Tel. (0)31-12 80 42

Acid rain and dementia

Aluminium, released from the soil by acid rain, may be a cause of several forms of senile dementia, including Parkinson's disease and Alzheimer's disease. The claim was made at the Royal Society in London last week by Dr Daniel Perl of the University of Vermont. Perl, a specialist in brain diseases, was speaking at a symposium on geochemistry and health.

Aluminium is widely found in soils — it makes up some 5 per cent of the earth's crust. It is insoluble in water, unless the water is strongly acidic. Today, many upland reservoirs, fed by acid rain, supply homes with water laced with significant amounts of aluminium. Until now the danger of this has gone unnoticed.

For a decade, it has been known that aluminium in water causes dementia, convulsions and death among kidney patients using dialysis machines. Even tiny amounts of the metal have to be removed with ion exchangers, to prevent its accumulation in the bodies of patients, who may have more than a hundred litres of water passed through their body during a single session of dialysis (*New Scientist*, August 27, 1981, p 514). Now aluminium is being linked by Perl and others to senile dementia in the general population.

Many afflicted

Alzheimer's disease, one particularly virulent form of dementia, afflicts up to 3 million Americans. It claims more than 100,000 lives each year in the US, where it is now the fourth biggest killer among the old. In the early 1980s, Perl used new X-ray techniques to investigate the brain cells of victims of the disease. He found high concentrations of aluminium in the neurofibrillary tangles, the clumps of twisted nerve-cell fibres that are characteristic of Alzheimer's disease. "Where there are tangles there always seems to be aluminium," he

said last week.

The question remained: was the presence of the aluminium a cause or an effect of the disease. That question appears to have been answered by studies in three remote communities in the Pacific: the Chamorros on the island of Guam, Japanese on the Kii Peninsula, and the residents of part of West New Guinea. In each community the incidence of forms of senile dementia associated with large number of neurofibrillary tangles is very high — more than 100 times higher than in the US. Perl reported in *Science* that the tangles contain "dramatic amounts of aluminium". And each of the communities lives on soil that is extremely rich in bauxite, the rock containing aluminium. Local water supplies contain heavy doses of aluminium. That aluminium appears to cause their disease.

Paths sought

Perl is now investigating the subtleties of the matter: "How does the stuff get into the body? What is it doing?" Meanwhile, the combined growth of acid rain and diseases such as Alzheimer's in the Western nations takes the significance of his work beyond the study of disease patterns of Pacific islands. "Acid rain releases very large amounts of aluminium. It appears to be in an available form. It is very toxic to plants and fish. The question is: does this reach higher (up the animal kingdom)," he said after last week's meeting.

Aluminium appears to do most damage when calcium and magnesium are absent. It is then that aluminium can bind with proteins, cross cell walls, and disrupt biological processes. The phenomenon has been noted in investigations both of trees damaged by air pollution in West Germany and of the death of fish in Scandinavian lakes, where aluminium released by acid rain is a much more potent killer than the acid itself. Perl says that in

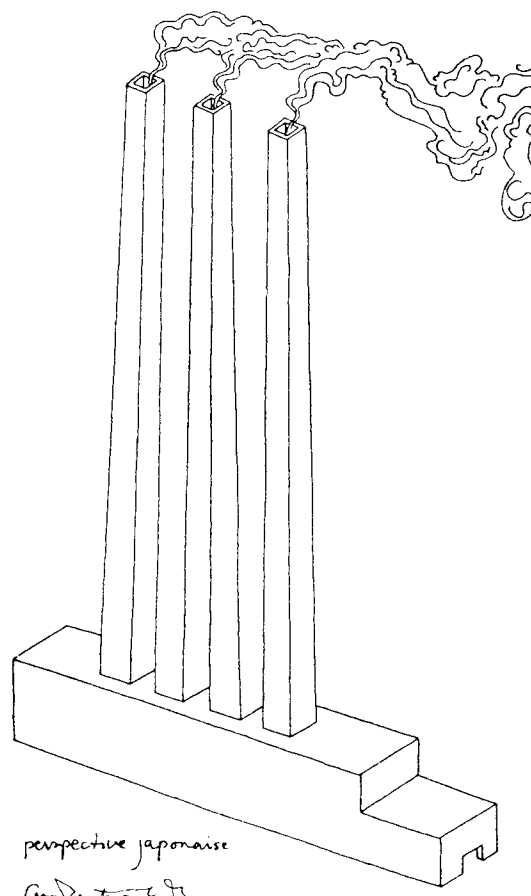
Guam, too, calcium and magnesium are absent in both soils and water.

Limits exceeded

In Britain, the water authorities do not recognize aluminium as a risk to health. New European limits on the presence of aluminium in tapwater, which British authorities say are set for "aesthetic" reasons, are widely exceeded. In Yorkshire more than 20 per cent of the water supplied to homes breaches the limit of 200 micrograms of aluminium per litre of water.

In many parts of northern Britain water contains more than 1000 micrograms per litre. Published water-quality records show samples with up to 28,000 micrograms, more than 100 times the EEC limit. At many water-treatment works the problem is made worse because aluminium sulphate is added to moorland water during its treatment.

Fred Pearce, *New Scientist*, April 25, 1985



Tougher on acid rain

Canadian attempts to control acid rain are far ahead of the American schemes, a report by the US Congressional Research Service says. Controls in Canada are expected to reduce sulphur dioxide emissions by half, to 2.3 million tons a year in 1994.

By contrast, sulphur dioxide emissions in the United States may well increase above their present 24.1 million tons per year.

Sulphur dioxide and nitrogen oxides in the atmosphere combine with water vapour and fall to earth as acid rain, which can damage forests and kill aquatic life in lakes and rivers. It is estimated that more than 48,000 lakes and watercourses have been damaged by acid rain in Ontario and eastern Canada.

The US study is not entirely laudatory of Canada, pointing out that tighter controls slapped on vehicle exhausts in March do nothing more than regulations that have been in place in the United States for nearly four years.

But the study does praise Canada's sulphur dioxide control program, saying it *"surpasses current US standards by requiring significant reductions by existing facilities beyond standards necessary for human health."*

US sulphur dioxide pollution standards, enforced under the US Clean Air Act, are designed to eliminate only human health hazards and do not deal with the threats acid rain poses to property and the environment, the study says.

"In this sense, the Canadian regulations will apparently be more effective... than current US regulations."

In a related development, an American judge has ordered the Reagan administration to start forcing midwestern states to reduce sulphur dioxide emissions, the Associated Press reports.

Under 1977 amendments to the Clean Air Act, new power plants must be equipped with smokestack scrubbers to filter out substantial amounts of sulphur dioxide. Utilities in the mid-

west have resisted voluntary equipment updating, contending the cost would raise the electric bills of their consumers by up to 30 per cent.

Reagan has opposed new federal controls on sulphur dioxide emissions from coal-burning power plants, contending the evidence is insufficient to blame them for acid rain damage.

Ruling on a suit by six northeastern states, US District Judge Norma Johnson in late July gave the US Environmental Protection Agency nine months to order reductions of sulphur dioxide emissions from midwest power plants.

The northeastern states contend that pollution from the midwest causes the acid rain that falls in the northeastern United States and in Canada. Though no states were specifically named in the order, the petition on which the suit was based targeted Ohio, West Virginia, Illinois, Indiana, Kentucky, Michigan and Tennessee as likely points of origin of the pollution.

The Sunday Star, July 28, 1985

UNITED STATES

Support seen for controls

The latest Harris Poll results, which indicate a 94 per cent level of awareness of the acid rain problem amongst the American public, give further proof that in all regions of the US public opinion supports the need for control of acid rain. However, this support has not yet been effectively mobilized by interest groups, and it remains to be seen whether pro-control forces can mobilize public support for acid rain controls in the context of the midterm Congressional elections, which will take place in November 1986.

Introduction of legislation reflecting a consensus of opinion in either the House or Senate would of course be helpful. So

would also new research findings indicating specific affects of acid rain on forestry and/or human health (although, of course such results would be most unwelcome in another sense!).

In a Washington speech on March 18, 1985, pollster Louis Harris released the most recent result of polls done by his organization on the environment and in particular on acid rain. Harris noted the number of respondents aware of acid rain had gone up from 30 per cent in 1980 to a nearly unanimous 94 per cent today. Harris said *"There is a growing sense that the matter of acid rain has been contemplated, discussed, studied and tossed back and forth, to put it bluntly, enough.*

It's about time to do something about acid rain, just as it is about time to do more about toxic waste dumps, and to do more about keeping the environment from continuing to be fouled."

He also noted that respondents placed the responsibility for cleanup at the door of investor-owned utilities, but people on average are willing to pay close to 70 dollars a year if part of the costs of cleaning up acid rain are passed on to them.

Harris indicated that support for controls and willingness to help finance the cleanup is strong in all regions of the country and also in Congress.

*Acid Rain News, June 1, 1985
Canadian Coalition on Acid Rain*

Literature

Acid Earth (1985)

190 pages. Written by John McCormick and published by Earthscan, 3 Endsleigh Street, London, England WC1H 0DD. Price: 3.95 pounds. (See enclosed leaflet.)

Ein Modell für uns: Die Erfolge der japanischen Umweltpolitik (1985)

223 pages. By Shigeto Tsuru and Helmut Weidner. Published by Verlag Kiepenhauer & Witsch, Köln. Price: DM 12.80.

Wie lange fahren wir noch? Die Zukunft des Automobils (1984)

280 pages. By H. Hiess, H. Koch, W. Niederle, H. Reiter and J. Sonne. Published by Verlag der Österreichischen Hochschüler-schaft, Wirtschaftsbetriebe GmbH, Liechtensteinstrasse 13, A-1090 Wien, Austria.

Bilavgaser och skogsdöd (1985)

109 pages. Edited by Marie Arehag. Chalmers forskarförhör No. 4. Can be ordered from: Informationssektariatet, Chalmers tekniska högskola, S-412 96 Göteborg, Sweden. Price: 100 kronor.

Der Bergwald stirbt (1985)

An information kit about the threat to the Alps. Obtainable from Deutscher Alpenverein, Praterinsel 5, D-8000 München 22, F.R.G.

The American West's acid rain test (1985)

50 pages. By P. Roth, C. Blanchard, J. Harte, H. Michaels and M. El-Ashry. A research report from World Resources Institute. Order from WRI Publications, P.O. Box 620, Holmes PA 19043-0620, U.S.A. Price: 4.50 dollars.

Acid Rain News

Monthly newsletter, published by Canadian Coalition on Acid Rain, 112 St. Clair Avenue West, Suite 504, Toronto, Ontario M4V 2Y3, Canada.

Le mal des forets et la pollution de l'air (1985)

A special issue of La Baleine. 22 pages. Les Amis de la Terre, 72 rue du Chateau d'Eau, F-75010 Paris, France. Price: FF 25.

La Voiture Propre (1985)

8 pages. Written by Alain Zolty and published by Les amis de la Terre, 72, rue du Chateau d'Eau, F-750 10 Paris, France. Presents the problem of air pollution from vehicles, and discusses various measures for reducing such pollution, especially by the use of three-way catalytic converters. Obtainable from the above address.

Waldschäden in Österreich (1985)

14 pages. Offprint from "Förderungsdiens", Heft 6/85. Written by Alfred Kastner. Describes forest damage in Austria, its causes and the measures that have and can be taken. Obtainable from Bundesministerium für Land- und Forstwirtschaft, Stubenring 1, A-1010 Wien, Austria.

Dépérissement des forêts et pollution de l'air (1984)

16 pages. Information about air pollution and forest damage in Switzerland. Published by Département fédéral de l'intérieur. Obtainable free of charge from l'Office fédéral des imprimés et du matériel, EDMZ, CH-3000 Berne, Switzerland. (Order number: 301.051/f)

Air Pollutants Effects on Forest Ecosystems (1985)

Proceedings of the international symposium "Air Pollutants Effects on Forest Ecosystems" held in St. Paul, Minnesota, in May 1985. The 440-page volume contains papers and posters dealing with the symptoms, causes, and potential effects of air pollutants on forests in North America and Europe.

Copies of the proceedings may be ordered from The Acid Rain Foundation, 1630 Blackhawk Hills, St. Paul, MN 55122, USA. Cost is 39 dollars plus 6 dollars for postage and handling (45 dollars total). For international orders air-mail postage and handling is 16 dollars (55 dollars total).

Correction

In Acid News No. 2 we announced an audiovisual program

entitled "Acid Rain — The Silent Crisis", produced by the International Centre for Conservation Education.

Unfortunately incorrect prices were given. The price of the 40-slide pack version is 7.95 pounds, that of the filmstrip 3.95 pounds, and the cassette 3.00 pounds. Plus post and packing at cost. All including illustrated notes. The program can be ordered from: ICCE, Greenfield House, Guiting Power, Cheltenham, Glos., England GL54 5TZ.

Was ist los mit unserem Wald? (1985)

96 pages. Published by Presse- und Informationsamt der Bundesregierung, Weickstrasse 11, D-5300 Bonn 1, FRG. Presents the problem of forest decline in the FRG, showing how to recognize the damage (colour photos) and what measures have been and can be taken to solve the problem. Available from the above address.

Luftföroreningar och skogsskador (1985)

16 pages. Published by Skogsstyrelsen and Statens Naturvårdsverk. Illustrates forest damage in Sweden (colour photos), and sets forth the causes and the measures that can be taken by the forestry to reduce it. Obtainable from Skogsstyrelsen, Lärmedelsbeställningen, S-551 83 Jönköping, Sweden. Price: 5 kronor.

International Symposium on Acidic Precipitation

September 15-20, 1985, Muskoka, Canada. Gathering of about 400 of the world's leading scientists studying acidic precipitation, which will summarize the results of the latest scientific research from around the world and also identify gaps in our information on acid rain. The conference will also identify areas of consensus among scientists as to the nature, causes, and impacts of acid rain.

More information from: Muskoka Conference '85, 112 St Clair Ave. West, Suite 303, Toronto, Ontario M4V 2Y3, Canada.

Tourist boycott of Britain

One of the postcards being used in the tourist boycott campaign.



This September environmental groups from ten countries launched the first campaign using economic pressure to combat British pollution. Letters of protest were handed in to British embassies in several European countries, as groups representing over 2 million people formally announced an international tourist boycott of the United Kingdom in protest against its export of sulphur pollution, the main cause of acid rain. Thirty-five thousand special postcards, depicting British power stations polluting Europe and saying "WE LOVE YOUR COUNTRY — BUT NOT YOUR POLLUTION" have already been circulated amongst conservation and green groups in Europe and North America.

Campaign coordinators

These cards are now being mailed on to British hotel-keepers, tourist boards, politicians and others, by people who threaten to take their holidays elsewhere until Britain's sulphur emissions, the greatest of any country in western Europe, are reduced. The postcard's text explains in English, French, German or Swedish that the UK exports over 20 tons of sulphur air

pollution for every ton it imports from abroad. **Friends of the Earth International** is co-ordinating the campaign for **AIRPLAN** (Air Pollution Action Network), a new worldwide alliance of environmental groups formed to fight air pollution. Another 15,000 postcards will be distributed shortly and AIRPLAN intends to persuade tour operators, as well as individuals, to switch destinations.

Speaking from FoE International headquarters in Amsterdam, Pieter Lammers, AIRPLAN organizer, said: "By staying out of the *Thirty-per-cent Club* and pumping pollution over to Europe, Britain not only damages the environments of other countries but also passes the bill on to others. Economic sanctions are the only way to make the polluter pay — a principle that the UK Government is supposed to respect, but actually abuses. Where reason, justice, logic and science have failed, we hope that even Mrs Thatcher will take notice when foreign tourists disappear from the streets of London, or the hotels of Stratford Upon Avon."

Much at risk

In the Friends of the Earth's London office, Acid Rain Campaigner

Chris Rose welcomed the campaign saying: "After years of extreme high-handedness on the part of the British government, it is only to be expected that the European public, who feel deeply about poisoned lakes and dying forests, will deploy its spending power in protest against exports of pollution. In countries such as Austria, Germany and Switzerland, as well as in Scandinavia, tourism itself is directly threatened by acid rain: hoteliers are losing their livelihoods, as are also fishermen and foresters. A similar fate may well await this country. In Wales, numerous game fisheries have already disappeared from the rivers Irfon and Tywi, for example. In Scotland, whole lochs are now dead. In England, eight major cathedrals and religious buildings are eroding under acid deposition. Moreover, Friends of the Earth UK's survey of yew and beech trees shows that ancient churchyard yews, famous gardens, and areas such as the New Forest and the Wye Valley, are already at risk. Britain stands to lose more than its reputation if pollution from power stations, road vehicles and industry is not cut back dramatically."