program of study into the possible health effects of acid rain. A British report on the health hazards of lead recently concluded that the major focus of concern over this problem should be on the lead being absorbed from lead pipes by the acidic waters of Scotland. Why are these waters acidic? At least in part because of acid rain falling on poorly buffered streams and lakes. The Scots are suffering because of their famous soft water, very much like that of the Canadian Shield. In Canada most of our major population centres draw their water from harder, better buffered sources, but what of New York City? What is the history of pH levels in its reservoirs? I am not suggesting a problem equivalent to that of Scotland if for no other reason than the much rarer use of lead piping. However, one could wonder what other metals may be picked up and what implications they may have.

Yet having referred to heavy metals, I must say that the principal concerns over health effects cited by most authorities are in another area entirely – the inhalation of fine particulates. Here the concern relates primarily to effects on people with respiratory ailments. More research is needed, the arguments continue but so does acid rain.

We know for a fact that the increased acidity in the rain – and in dry particulate deposition – is caused by sulphates and nitrates in about 70 per cent to 30 per cent proportions, the precursors of which are sulphur dioxide and oxides of nitrogen. There are arguments about the precise behaviour of NO_x in the atmosphere but much less about SO_2. We know that high stacks designed to reduce local pollution not only send the SO_2 and NO_x further afield but, in the case of the former, provide more time for it to be changed into the acid-causing sulphates. And we know where the pollutants are coming from in both countries. Atmospheric modelling is a relatively new science and the arguments go on about the accuracy of this or that specific calculation of the movement and transformation of pollutants. But from where I sit the arguments are mostly over points of detail – precise amounts of fall-out in a given place from a given source. No knowledgeable person questions the basic fact that these pollutants are going up, moving considerable distances and coming down in an acid-causing form. Also we know that at least half of the acid rain falling in Canada has its origin in the United States.

The solution is therefore very straightforward. We must reduce drastically the amount of acid-causing pollution that is being emitted in both our countries. I am told that it is technically possible to effect such reductions. The only stumbling block is cost. How much and to whom?

In Canada, we are examining that question urgently – not from the perspective of wondering whether we should take action but with the intention of selecting the best means of doing the job. The provincial government has already begun in Ontario by putting a lid on the International Nickel Company's SO_2 emissions at a level of 1,100 tons a day below current allowable emissions and mandating a further 25 percent reduction in two years. We're not stopping there! Through a joint Canada-Ontario structure we will be developing much tighter emission requirements to be implemented later in this decade. We are also going after other major polluters both smelters and power plants. In a word we've started to move. I might add that our