

of whatever mixture of abatement and adaptation is adopted, by accident or design. The calculations of the timing of change are hugely uncertain, those of cost much more so, but it is not unreasonable to suppose that it will be half a century, give or take a decade or so, before the surface of the Earth goes seriously awry. This journal's consistent opinion over several years is that it will take far longer to build a durable greenhouse regime than to remove the remaining uncertainties in the predictions.

That is why, even at this stage, the fine print of the first stab at a global warming treaty needs close attention, and at two levels. The technical issues are taxing enough. Can a country's records of fossil fuel imports and production be taken as a reliable proxy of carbon dioxide emission, for example? Does a burning oil-well count against a country's target and, if there is a carbon tax, who pays tax to whom? Although wood-burning may be greenhouse-neutral over the lifetime of forest trees, what happens when energy-restricted communities begin burning wood more quickly than they should (which is inevitable)? What is to be said and done about methane, a quickly increasing greenhouse gas whose sources are only poorly understood? If agriculture in the form of animal husbandry and rice-growing proves to be the culprit, will there be a democratic government willing to impose restrictions on its farmers in the interests of a global warming treaty? And what, in any case, are the current predictions of the climatic consequences of current atmospheric concentrations of greenhouse gases?

What the treaty most urgently needs is a way of providing a running commentary on issues such as these. The obvious model is the UN Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), which has over three decades provided periodic authoritative reviews of current understanding of the hazards of peaceful and warlike nuclear power. It has the advantage that its members are appointed by governments, but function independently of them, thus retaining their professional authority. But global warming is a more urgent problem than even UNSCEAR's, whence the need that the new committee (UNSCOG?) should report once a year at least (and be sufficiently equipped for that). Its main task, as the years go by, would be the progressive refinement of the goals at which the signatories of a global warming treaty should aim. One of the few certainties of this field is that the numbers will change continually, as time passes, in one direction or the other.

The second class of fine print is that dealing with the political matters that must inevitably be covered by a global warming treaty. Industrialized countries will say that the less of that there is, the better. But there must be some. The rich countries must at least acknowledge that they must bear the brunt of at least the earlier phases of restraint. So much appears to have been agreed in New York last week. The extent to which, and the price at which, they are obliged to compensate poor countries for forgoing rational but atmospherically damaging developments (such as burning the Amazon Basin) is a matter for bargaining, on which the two sides are still far apart. The really contentious issues —

population restraint, surrender of sovereignty to monitoring organizations and the conversion of aid funds into those administered by the World Bank's Global Environmental Facility — are as yet untackled. Can the International Negotiating Committee make a useful start on them? That is what matters most. Meanwhile, those weeping over a supposed sell-out in New York should put their energy into making sure that the Rio treaty is ratified by the 50 signatories needed to get the show on the road. □

Science on hit-list

The White House and Congress vie with each other in their ignorant attacks on science.

US PRESIDENT George Bush has started an election year budget fight with Congress that has resulted in a contest over which side can make scientific research look silliest (see page 103). In the process, each side is simply showing its ignorance.

It began in March when Bush (the Republican politician) denounced the Democratic Congress for its "perks, privilege, partisanship and paralysis" and declared that he could save the US taxpayers \$4,000 million if Congress would only give him the authority to cut specific items from the budget. The big item in Bush's savings plan, which would take back money that has already been approved for spending in what is charmingly known as a "line-item recision", was the Seawolf submarine. (Cancelling the two submarines on the drawing-board would reduce the budget by \$3,000 million.) The other \$1,000 million would come largely from science projects. The Bush hit-list included research on eastern filbert blight, storage of Vidalia onions, fungus-resistant celery and seedless table grapes.

The list provided a field day for Democrats who countered with their own list of expendable silly science, including a study of "holism in psychobiology in the twentieth century" and "affective bases of person perception", each approved by peer review.

This exercise in political absurdity, which is likely to come to naught, reveals how far outside the mainstream science still is. Despite a strong Office of Science and Technology Policy in the White House and a host of science committees in the Congress, nobody seems to have thought twice about perpetuating the myth that scientific research (selected by peer review, as was each of the challenged projects) is at once self-indulgent foolishness on the part of scientists and, in any case, beyond the comprehension of ordinary citizens.

Bush and the Congress should be embarrassed by their narrow-minded approach. If either the President or the Congress wishes to challenge the wisdom of the peer-review system (which they certainly have a right to do), they should ask substantive questions about the validity of the science, not attack it just because it sounds silly — although in the case of holism in twentieth-century psychobiology the Democrats may be on to something. □