

Scientists for Global Responsibility

Newsletter No. 22

February 2001

Moving into the New Millennium...

Stuart Parkinson

Whether you consider the start of the third millennium to be 1st January 2000 or 2001, it seems a good opportunity to reflect on whether human society is on the path to the responsible use of science and technology...

Changing Climate

Perhaps the place to start is the issue of climate change, caused by the widespread burning of fossil fuels and deforestation. At the end of last year the Intergovernmental Panel on Climate Change (IPCC) virtually doubled its estimates for the temperature increase expected by 2100, from the range 1-3.5°C to 1.5-6°C, mainly due to higher estimates for future global energy consumption. And this autumn in the UK we were perhaps given a hint of what is to come with the highest rainfall ever recorded (ie for at least 250 years). Against this background we saw Europe-wide fuel tax protests and the ignominious collapse of the 'COP6' climate negotiations (see p8), showing just how difficult it is to convince politicians and the wider society of the need for fundamental changes, both to the technologies we use and the lifestyles which we base on those technologies.

A New Arms Race?

Meanwhile, the USA has sparked controversy and condemnation by progressing its National Missile Defence (NMD) system: a more limited version of the 'Star Wars' programme initiated by Ronald Reagan in the early Eighties. It claims this system is to defend itself against nuclear missiles from 'rogue' states

(eg North Korea), but such a system would break the Anti-Ballistic Missile treaty and is likely to restart the global arms race. Both Russia and China have condemned the programme, but with George W. Bush now confirmed as president, it seems set to go forward.

Feeding the World

Currently about 840 million people are malnourished, with 8 million of these dying each year. This is despite there being enough food grown around the world. A combination of factors, including population growth and modern intensive farming methods, are causing long term damage to soil. The worst case exists in Africa where about 65% of the agricultural land is degraded. Overfishing has severely depleted many of the world's fisheries. For example, stocks of cod in the North Sea are at about 25% of their level in the 1970's. High yielding genetically-modified crops have been hailed by some as the answer, but the poor will still have the same problems affording them and the possibility of long-term environmental damage remains. For example, recent research from Canada has found that GM crops have transferred their herbicide resistance to weeds.

New Diseases

Disease is also a major concern. In many parts of southern Africa, one in four of the adult population is HIV positive, with life expectancy having fallen to less than 35 in several countries. But the drugs which can help prolong the life of many of the victims are still too expensive to be widely used. Meanwhile, we can only guess the scale of future health problems due to 'superbugs' (created

by the overuse of antibiotics) and variant CJD (due to consumption of BSE-infected cattle).

Corporate Control?

And all of this is taking place against a background of economic globalisation where multi-national companies are gaining substantial power both with political decision-makers and in science and technology.

It would be easy to become dispirited at these seemingly insurmountable problems - but there are hopeful signs...

Climate of Change?

Current projections of UK greenhouse gas emissions indicate that they will be 23% below 1990 levels by 2010, nearly double the UK's target of 12.5%. The use of renewable energy technology is growing internationally - for example, wind now supplies 13% of Denmark's energy consumption. Further, fuel cells for

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News from SGR

A few words from the Chair..

Phil Webber

This newsletter, having no particular theme, contains a wider range of subjects than usual beginning with a look at how far we are on the path towards the responsible use of science and technology (front page). One of our current contributions to this path is the "Careers which don't cost the Earth" project, which has just been given a boost by a final additional grant of £1450 from the Joseph Rowntree Charitable Trust via the Martin Ryle Trust. This will enable us to publish and distribute the shorter version of the careers guide. Vanessa Spedding is currently editing this version. It will be good to see this work completed and I feel sure it will be valuable for young scientists. I also hope that it will help us recruit new members as we visit various alternative careers fairs around the country (see p15 to help with this). Our aim is to have

this complete by the time we hold our next conference this May.

Speaking of which, our plans are to hold this conference together with Yorkshire CND in Leeds on the theme of the US National Missile Defence system (back page).

Down on earth and in the present the issues of genetically modified organisms and climate change continued to focus our activity. Eva Novotny and others are co-ordinating the presentation of evidence against the inclusion of a GM maize seed in the UK national list (p3). We had two observers at the climate negotiations (p8) - Ben Matthews (who gave a short talk on his climate education work) and Stuart Parkinson. The negotiations were given particular emphasis following the chaos produced by the prolonged floods and fuel tax

protests. SGR gave interviews concerning these issues on Radio 5, local radio and to Reuters.

So there is a lot of positive activity within SGR. As you will have seen, we have completed our 'Awayday' consultation (the final report being sent out to all members just after Christmas) and have produced plans of how we expect to develop the organisation. In order to help spread our message, we envisage a new leaflet, a poster and a set of talks on key topics with back up notes. Climate change, NMD and GM organisms are all high on this list as part of what I think of as our "responsible science programme". However, the NCC is still too thin on the ground and is still seeking a press officer, so volunteers continue to be very welcome!

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International Week of Science and Peace (IWOSP) 2000

Alan Cottey, the UK co-ordinator, reports on the 15th IWOSP (6th-12th November, 2000)

This year there were 14 events in the UK IWOSP programme. A more detailed report is given on the website: <http://www.sgr.org.uk/iwosp.html>

Of the fifth Synge memorial event, Belinda Clarke wrote: "Over 200 people met scientists from the Norwich Research Park at an event to commemorate Professor Dick Synge and his views of ethical applications of science. Entitled 'Science Communication - From Shouting to Sharing', it addressed ways that scientists and the public could communicate better with each other."

SGR organised two electronic debates during the Week on our new 'web-board' (see p13). One was on "Democratic Science" and the other on "Understanding Immigration Controversies".

Future Outlook, of Oxford University, held an Alternative Careers Fair. Stuart Parkinson of SGR gave a talk.

'Gene Genie', organised by Critical Mass, was a programme of events centred on an art/science exhibition about genetic engineering, held in London. Of the four associated events, Milan Rai reported: "Artist Emily Johns' wide-ranging discussion, "An evening of myth, science and art", of the ideas and influences behind her images for Gene Genie was a particular highlight. The question and answer session with molecular biologist Angela Ryan was also very enlightening, and much appreciated by those able to benefit from her detailed knowledge."

Of a public lecture on 'Ecological Restoration' at the Centre for Human Ecology, Edinburgh, Caroline

Hoffmann wrote: "Barbara McGregor gave a fascinating talk on her personal voyage from being a passive CND member to becoming part of the peaceful direct-action group Trident Ploughshares."

ARROW and Voices in the Wilderness jointly organised a vigil, in London, against sanctions on Iraq.

There were two newsletter items. One was an issue of the newsletter of SGR's Population, Consumption and Values Study Group, with the theme "Reflections on 'National', 'International', 'Supranational' and 'Transnational'". The other was an article by Alan Cottey, in the UNA Norwich and District Branch Newsletter, on "Science: Beyond Internationalism?"

<iwospuk@sgr.org.uk>

SGR presents evidence to GM maize hearing

Eva Novotny

The Ministry of Agriculture, Fisheries and Food (MAFF) has been holding a hearing into the application by the biotechnology company Aventis to have a variety of genetically modified maize, Chardon LL, added to the National Seed List. This listing is the final step required before a crop can be commercially grown in the UK. If Chardon LL were to be accepted, it would be the first GM crop to be grown commercially in this country.

Friends of the Earth uncovered legislation that forced the Ministry to allow a public hearing; and 67 individuals and groups declared their desire to be heard. Hundreds of other protesters sent written statements. Only one party wished to be heard in favour of listing: Aventis, who have

refused to produce a (cross-examinable) witness to give evidence! In November, just before SGR was to be heard, the hearing was adjourned. This followed the revelation that certain tests on Chardon LL made by the French had not conformed to UK regulations. MAFF are currently considering how to proceed.

If the hearing is re-convened, SGR will give evidence of risks to human and animal health and to the wider environment. Specifically, we shall express concerns over:

- the possibility of health problems arising from the use of the CaMV promoter, which may lead to the creation of new, infectious viruses;
- the reluctance of animals to eat GM crops, and indications from tests on rats and chickens that many of

these animals did not thrive on GM protein;

- the inevitability of cross-pollination with other maize varieties, which would contaminate non-GM varieties and jeopardise organic growing of maize;
- the damage to the environment and to human, animal and plant health by chemical farming, as required by GM plants, compared with the biodiversity and the excellence of health resulting from more natural methods of farming.

A more detailed report or update will be given in the next SGR newsletter. Once SGR has been heard, our evidence will become available on our web-site.

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Obituary

DAVID WILLEY 1931 - 2000

I am very sorry to report that David died on 14 November. I believe that many of you knew that he has suffered severely from cancer for several years. Among his many sterling qualities were a refreshing openness about his condition. He continued throughout this time, and to the last, to work assiduously for his altruistic concerns about global population. His courage and energy have been an inspiration.

David was convinced that the earth's large and rapidly increasing human population was a major problem and, particularly, that this problem received much too little attention. Whereas the problems of environmental damage and social injustice were at least acknowledged - even if the corrective measures were insufficient - population was off-limit for most. Many who were concerned for environmental protection and social justice feared to speak out clearly on population issues, lest they be associated with such unacceptable mindsets as xenophobia and racism.

David considered such fears to be a cop-out. Motivated by altruism, rationalism and utilitarianism, he devoted his formidable energy to correcting the imbalance. He published letters and articles on the subject at an impressive rate, promoting thought and debate as widely as possible.

He was the founder and driving force of the Optimum Population Trust (OPT). The concept of optimum population was founded on David's utilitarianism. OPT use the definition: *'The optimum population of the world or its regions is the one that is most likely to make the option of a good quality of life available to everyone everywhere, both now and in the future.'*

David's interests and activities were unusually wide. His analysis of the complex linked issues of environment, population and justice were supported by wide study of philosophy and by his skills as a linguist and language teacher. He was also a practical man. In a rich and

varied life, he ran language schools and a printing company, and he made many adventurous travel and climbing expeditions. (Readers wishing to learn more about David's manifold activities may consult *The Times* obituary, 1 December.) His practicality led to the recommendation of rough numerical values for various population optima.

SGR has to admit that, before 1998, it was one of the many organisations that aim for a coherent, workable vision of a better future, yet give little overt attention to population issues. David played an essential part in changing that. In consequence we have, since early 1999, a study group *Population, Consumption and Values*. The PCV group communicates primarily by email. SGR members wishing to join the group should contact me. Non-members of SGR are welcome to be on the distribution list of the PCV Newsletter.

Alan Cottey, Convenor, PCV study group <pcv@sgr.org.uk>

Elsewhere in the news...

Chernobyl finally closes

The final operational reactor at Chernobyl, No. 3, was shut down on December 15th. The Ukrainian government only agreed to the shutdown after loans were approved from the European Bank of Reconstruction and Development and the European Commission to complete construction of two new nuclear plants. These plants will offset the shortfall in generation capacity caused by the closure of Chernobyl.

According to Ukrainian government figures, more than 4,000 clean-up workers have died and a further 70,000 have been crippled by the accident at No. 4 reactor in 1986. A further 3.4 million people are estimated to be suffering from fallout-

related diseases, although the World Health Organisation believes the real figures to be higher.

Guardian (16/12/00)

Russia proposes deep nuclear cuts

Russian president Vladimir Putin has proposed that both Russia and the United States cut their nuclear arsenals to 1500 warheads each. It is suggested that the cuts could be made as a means to counterbalance the United States' proposed National Missile Defence programme. Currently, the START III talks are negotiating to reduce the number of warheads to between 2000 and 2500 each.

BBC news online (13/11/00)

Nottingham University accepts tobacco funding

Controversy surrounded the decision by Nottingham University to set up an International Centre for Corporate Social Responsibility using a £3.8 million donation from British American Tobacco (BAT). BAT is one of the world's largest tobacco companies and is currently under investigation by the Department of Trade and Industry concerning involvement in tobacco smuggling. Cancer care and research charities accused the university of accepting 'tainted' money.

BBC news online (5/12/00)

Discussion of this issue will shortly begin on SGR's web-board - see p13.

Moving into the Millennium...

[continued from front page]

use in motor vehicles will be commercially viable within a couple of years. Meanwhile resistance from business to action on climate change continues to crumble - the latest sign being the withdrawal of Texaco and General Motors from Global Climate Coalition (the main 'climate sceptic' lobby group).

Disarming Moves?

Meanwhile, Russia's President Putin has offered to begin negotiations to cut US and Russian nuclear arsenals to 1500 warheads each (see above). In parallel with this, the prospect of spiraling costs for the NMD coupled with the fact that it is unlikely to be effective (the reason for the demise of the original 'Star Wars' programme) are making senior US military figures nervous (see p15).

Eating Well...

On the issue of food, it should be realised that the number of malnourished in the world halved between 1970 and 1990 and the trend seems to be continuing. Meanwhile, concern over safety and environmental damage due to conventional agriculture has caused a tenfold increase in the area covered by

organic farms in Western Europe in recent years. Some argue that with a growing global population, organic farming will not be able to provide the amount of food necessary because it tends to result in lower crop yields. However, research from Dutch agricultural scientists shows that organic farming could feed the future global population if coupled with a diet based on low meat consumption (since livestock requires much more land and energy than plants) - and meat-eating has started to fall in a couple of northern European countries.

Cheaper drugs?

A very interesting development on the health-care front is the decision by the Brazilian government to ignore the patenting laws on AIDS drugs so that it can mass-produce them cheaply. Obviously, it can then afford to treat many more AIDS sufferers. This raises the whole issue of who should pay for drug development in order that it reaches those who need them.

Ethical Business

Finally, on the issue of corporate responsibility, there are very positive signs from the ethical investment sector. UK investments screened on the basis of ethical criteria now total £2.8 billion and are currently out-

performing conventional investments. Further, large companies are now producing, increasingly with external auditing, annual reports detailing their environmental and social performance.

But there is still much to do - and SGR is playing its part...

For example, during the recent floods and in the run-up to the COP-6 negotiations we highlighted climate change issues in the press and lobbied the UK government. On the issue of GM crops, we submitted evidence to Chardon LL hearing arguing against its inclusion on the national seeds list (see p3). Concerning arms control, the next SGR conference (see p16) will focus on the NMD issue. And, of course, many of the issues discussed in this article will be covered in our ethical careers guide for scientists and engineers, which is nearing completion.

The question of the responsible use of science and technology is a critical one for the 21st century, and SGR will continue to be heavily involved.

References can be obtained from the author - email: StuartP@sgr.org.uk

How Green Is the Media Jungle?

David Cromwell argues that media coverage of crucial environmental issues is systematically biased, but it's not a conspiracy, he says, just a good system of filters

What constitutes responsible media coverage of environmental issues? Take climate change, possibly the greatest threat facing humanity. The 2,500-member Intergovernmental Panel on Climate Change (IPCC) estimates that stabilising global temperatures requires a 60% cut in the emission of greenhouse gases. At Kyoto in 1997, developed countries struggled to agree on a 5.2% cut. And even that puny target has yet to be ratified by the requisite number of governments. Meanwhile, according to climate scientist Mike Hulme of the University of East Anglia, tens of thousands of people are killed by extreme floods and storms in a new climate regime 'tainted' by industrial society.



Do broadcasters and newspapers reflect the scale and urgency of this problem? Hardly. Consider the outpourings we used to endure in the West about the 'Communist menace'. The media brought the 'red scare' to a remarkable pitch, promoting the notion of a Soviet conspiracy working ceaselessly to weaken our defences so that a surprise attack could be launched at any moment. Now, in the decade since the end of the 'Cold War', formerly-secret state documents have been released which confirm that Western governments had little or no fear of Soviet invasion. The 'threat' was fraudulent. But the promotion of terror boosted the huge arms industries and the strategic interests of Western nations.

So whose interests would be served today by treating 'climate change' as a terrifying menace which urgently needs to be acted on? Certainly not those of the business corporations and their political allies. They all seem oblivious to the problem, happy to promote a life-threatening addiction to our fossil fuel-based economy.

It is estimated that there will be more than two million deaths from climate change-related disasters worldwide over the next ten years. Damage to property will amount to hundreds of billions of dollars. The occasional superficial newspaper report of climate scientists' warnings or dramatic footage of hurricane devastation on TV is a pitiful response.



How many people know that even the Kyoto Protocol falls vastly short of the cuts in fossil-fuel use that have to be made now in order to stabilize global warming? How many of us know about the millions spent by corporations on public-relations hacks and slick spinmasters to try and stop any action being taken? Where have the cynical activities of industry lobbyists been exposed? Where are the massive media campaigns to highlight these issues?

Let us not be fooled by the fact that many national newspapers, broadcasters and some regional dailies in Europe and North America have environment correspondents. The number of pro-business writers and cheerleading columnists promoting 'business as usual' is far greater. In any case, as the Australian writer Sharon Beder points out: "Environmental reporting emphasizes individual action rather than underlying social forces and issues." She continues: "A current-affairs TV show may expose corporation X for spewing toxic waste into the local waterway, but it will seldom look at the way corporations have lobbied to weaken the legislation preventing such dumping."



Of course, there are decent mainstream journalists who sometimes challenge the rhetoric of the corporate sector and their political

sidekicks. And occasionally the truth about environmental or human-rights abuses emerges. But the media is big business, tied into stock markets and the globalized economy. Media owners are wealthy people with many fingers in many business pies and are dependent on the support of advertisers. How likely is it that anyone calling for radical change in society — whether environmentalists, human-rights activists or opponents of the arms trade — will be consistently and fairly reported by corporate news organizations? How much more likely is it that their arguments will be vilified, marginalized or simply ignored?

Nobody is suggesting that there is a deliberate policy of crude suppression of dissident thinking: there is no conspiracy. In the last couple of years the British media, for example, have been reflecting people's justified concerns about genetically modified food. So we are not talking about a massive Soviet-style censorship machine, but something much more subtle and invidious.



In their acclaimed 1988 book, "Manufacturing Consent", Edward Herman and Noam Chomsky introduced a 'propaganda model of media control'. Their argument is that market forces act as 'filters' which determine what news is 'fit to print'. One of these filters is simply the nature of media ownership. The sheer size, concentrated ownership, immense owner wealth and quest for profit of the dominant media corporations mean that business priorities can, and do, shape editorial content.

Another major factor at work is advertising. Most media outlets depend on advertising revenue to survive. There is a subtle but immense pressure on any newspaper, commercial radio or TV station to

conform to an advertiser-friendly medium. It not only pays to be sympathetic to business interests. It is absolutely essential.

Even threatening to withdraw advertising can affect editorial content. In one 1992 US study of 150 newspaper editors, 90% reported that advertisers tried to interfere with newspaper content while 70% said advertisers tried to stop news stories altogether. Forty per cent admitted that advertisers had in fact influenced a story. According to media analyst Laurie Ann Mazur, the Mercedes Benz corporation told 30 different magazines in 1993 that it would withdraw its advertisements from any issue that contained articles critical of Mercedes, German products or Germany. Another propaganda device is 'flak': negative responses to critical articles that may appear in the press or on TV or radio. As Herman and Chomsky explain: "This may take the form of letters, telegrams, phone calls, petitions, lawsuits, speeches and Bills before Congress, and other modes of complaint, threat and punitive action."



Business organizations regularly come together to form flak machines. One of the most notorious of these is the US-based Global Climate Coalition (GCC) whose members include companies like Exxon (who owns Esso). The GCC was specifically set up by Burson-Marsteller, one of the world's largest public-relations companies, to rubbish the credibility of climate scientists and 'scare stories' about global warming.

There are other factors at work too. Even wealthy media corporations cannot afford to place reporters everywhere. They concentrate their resources where major news stories are likely to happen: the White House, Wall Street, Westminster and other centralized news 'terminals'. Business corporations and trade organizations are also trusted sources of 'newsworthy' stories. Editors and journalists who offend these powerful news sources, perhaps by questioning the bias of the furnished material, can be threatened by the denial of access

to their media lifeblood – fresh news. This has a subtle, sometimes not-so-subtle, but powerful effect in restraining editors from telling the 'whole' truth.



Have I exaggerated the problem? It can't possibly be that bad, can it? Isn't the issue of genetically modified (GM) food one of the biggest media stories of recent years? There is no denying that there was an explosion of newsprint and airtime devoted to GM issues in Europe, starting in 1998. Many sections of the mainstream media quickly picked up on the public's interest in the issue and ran with it. Biotech corporations took a hammering. Surely the media handling of the GM story blows the propaganda model out of the water? Not at all. Recall that we are not talking here about blatant, crude suppression of radical and green views. Nor is the press uniformly submissive to business interests, especially when confronted by massive public concern on an issue.

Sue Mayer, now of Genewatch, worked on GM issues with Greenpeace in the early 1990s when they were struggling to attract any media attention at all. Mayer believes the press "had to reflect the interest and information from public interest groups" which forced it onto the agenda. Previously the media "were extremely unwilling to look behind the hype of the companies and the hype of the scientists until they were forced to".



Moreover, much of the mainstream reporting on GM – again there are exceptions – treated it merely as a consumer story. The undermining of Third World agriculture and corporate dominance of the food chain were under-reported, in particular moves by Western corporations to control the supply of seed to peasant farmers. Significantly, negative reporting of activists who destroyed GM crops at test sites was common in the press, with activists frequently dismissed as 'vandals' and 'terrorists'.

Environment reporter Andy Rowell said recently: "It is becoming increasingly difficult to get hard-hitting current affairs stories that have an in-depth understanding of environmental, development or human-rights issues into the media, especially broadcast media." Rowell, who has worked for *The Guardian* newspaper in Britain, added: "All too often environmental issues are still ignored as editors fight for a quick popular headline."

Is the situation hopeless? Not if we first of all recognize that the media is an integral part of an institutionalised system of greed and violence that is destroying cultures and ecosystems around the planet. Second, activists ought to establish and maintain good links with sympathetic journalists, feeding them reliable information and supporting them in a hostile media environment. As far as other journalists are concerned, we ought regularly to highlight their omissions and biases, gently but relentlessly chivvying them along in the direction of truthful reporting.



As well as maintaining pressure on the mainstream media, we should also be developing alternative frameworks to raise and maintain awareness of the truth that so often goes unreported. Alternative media sources may be tiny, but they do play an important role. And then there is the Internet, though it remains an élite resource. Most of the world has never picked up a telephone, never mind surfed the net. However, campaigning groups find it amazingly effective in quickly spreading information to a global audience. It was a main route for mobilizing resistance to the Multilateral Agreement on Investment and for helping organize the 'battle in Seattle' against the World Trade Organization.

Greens, anti-globalisation activists and corporate critics are used to minimal or zero coverage. So any media coverage is received gratefully – even if it is pathetically inadequate given the appalling seriousness of the human-rights abuses and

environmental threats facing us. Nonetheless, a basic understanding of the propaganda model should be in the tool kit of every eco-citizen. Discrete campaign issues such as pollution, global warming, ozone depletion or species depletion are important. But just as important is the structure of the corporate media which processes, filters and distorts these issues – that structure is a

crucial cog in the profit-driven system that created the need for such campaigns in the first place. Only by understanding this can we hope to overcome the systemic bias of the corporate media which continues to block public understanding of the plunder of the planet and ways to combat it.

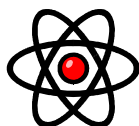
(Slightly modified version of an article first published in *New Internationalist*, October 2000. Reprinted with permission.)

David Cromwell is an oceanographer, writer and SGR member. His first book, "Private Planet", will be published in 2001 by Jon Carpenter (Charlbury, UK).

Slight Lifting of Israel's Nuclear Secrecy

John Moore reports on the first debate on Israel's nuclear policy in its Parliament, the Knesset

The Israeli government has never admitted possessing nuclear weapons; but, in 1986, Modechai Vanunu, a former technician at the secret nuclear complex at Dimona, revealed considerable detail about its nuclear weapons capability to the Sunday Times. In response, Mossad, the Israeli secret service, lured him from Britain to Italy where Israeli agents kidnapped him and took him to Israel to face trial for espionage. In March 1988, he was sentenced to 18 years solitary confinement. The transcripts of the trial were kept secret in the name of national security.



On February 2, 2000, the veil of secrecy surrounding Israel's nuclear capability was pulled back ever so slightly, with the first ever debate on its nuclear policy in the Israeli parliament, the Knesset. The brief debate, which lasted less than an hour, was requested by an Arab member of the Knesset, Issam Makhoul.

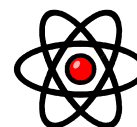
Makhoul was only allowed to speak for ten minutes, during which many Knesset members heckled, walked out or were asked by the Speaker to leave the chamber. In his speech, Makhoul reminded the Knesset that foreign estimates put Israel's nuclear arsenal

at 200-300 warheads. He urged that the whistle-blower or, as he called him, "messenger Vanunu" should now be released, having served nearly fourteen years of his sentence. Makhoul quoted from the 1955 manifesto of Albert Einstein and Bertrand Russell which appealed "as human beings to human beings" to "remember your humanity" and eliminate nuclear weapons for good.

Replying for the government to the debate, Chaim Ramon repeated the familiar official formulation that "Israel would not be the first to introduce nuclear weapons into the Middle East". The Knesset decided against having a wider debate by 61 votes to 16. The 16 voting in favour of a longer debate included Dalia Rabin-Philosof, daughter of assassinated Prime Minister Itzhak Rabin, and Uri Savir, former Director General of the Office of an earlier prime minister, Shimon Peres.

From its reporting of the debate and other signs, it seems that the Israeli media is increasingly willing to discuss and report on Israel's nuclear posture. In November 1999, the popular daily *Yediot Ahronot* published excerpts from over 1200 pages of transcripts of Vanunu's trial. These included testimony by Vanunu himself, concerning his motives for whistle-blowing, and by then Prime

Minister Peres, who had ordered his abduction. In response to the Knesset debate, the respected daily *Haaretz* editorialised that "Israeli society is mature enough to open its nuclear 'black box' with all due caution and look inside. We can and must conduct a public debate on nuclear policy"



Notes

1. The Knesset debate is discussed and Issam Makhoul's speech reproduced in the January/February 2000 issue of *Disarmament Diplomacy*.
2. The Campaign to Free Vanunu holds a vigil every Saturday from 12 to 2pm outside the Israeli Embassy in Kensington High Street, at the junction with Kensington Court. Contact UK Campaign to Free Mordechai Vanunu and for a Nuclear-Free Middle East at 89 Borough High Street, London SE1 (Tel/Fax 0207 378 9324).

John Moore is a Lecturer in Mathematics at Leeds College of Technology and an SGR member.

So What Did Happen at the Climate Negotiations?

Stuart Parkinson examines the detail behind the headlines at The Hague talks.

On the morning of Saturday 25th November John Prescott stormed out of the 'COP6' climate negotiations in The Hague signaling their collapse without agreement. So did the collapse occur because Dominique Voynet (French environment minister) was too tired to understand the complexities of the deal or because John Prescott is a chauvinist male who had given away too much to the Americans? In the storm that followed, you could be forgiven for missing what was actually discussed at these talks, how crucial they were and what is going to happen now.

The 'Crunch' Issues

The 6th Conference of the Parties (COP6) to UN Framework Convention on Climate Change (UNFCCC) began on Monday 13th November intending to discuss and agree (at least in general terms) over 200 pages of negotiating text covering a range of highly controversial issues relating to the practical implementation of the Kyoto Protocol. Since the meeting was only intended to last two weeks - the task was indeed an ambitious one.

Basically there were three main areas of disagreement between the countries:

- the inclusion of 'carbon sinks';
- the use of 'carbon trading'; and
- financing issues.

Carbon Sinks

Probably the most controversial issue, and the one that led to the eventual collapse of the talks, was whether and how 'carbon sinks' should be included. Sinks are activities which lead to absorption of CO₂ from the atmosphere and include growing or re-growing forests, various forest and agricultural land management practices and 'carbon dumping' in geological formations or in the ocean. Whilst carbon dumping is highly controversial (see SGR NL 16, or our web-site¹) and was not discussed at

COP6, the others were all actively under consideration.

The main problems are *uncertainty* and *permanence*. Measuring the amount of CO₂ a given forest (for example) absorbs is very difficult with many factors influencing the value. Further, there is the possibility that future climate change may lead to large scale 'die-back' of forests, thereby releasing large amounts of CO₂ back into the atmosphere. Hence, there is disagreement about whether one tonne of carbon stored in a forest is equivalent to one tonne of carbon reduced by, for example, switching from fossil fuel to renewable energy.

The negotiations centred around how much of a country's emissions reduction action could be counted in terms of sinks. The EU wanted them excluded until 2012 whilst the US (and its allies) wanted no restrictions. Since estimates for the current annual absorption of CO₂ by the USA's forests are about 19% of its 1990 emissions and its target is a 7% cut from 1990 levels, this would considerably reduce the amount of action required by the USA. During the negotiations both sides agreed that an upper limit should be placed on their inclusion before 2012 and discussions focussed on what level this should be. Eventually, with the talks deadlocked, the Chair of the meeting put forward a compromise which involved capping sinks to approximately 3% of 1990 levels. Both sides were unhappy with this, but in the final hours John Prescott managed to negotiate a level of about 5% if sinks were excluded from the Clean Development Mechanism (carbon trading with developing countries - see below). This is the deal that Dominique Voynet and some of the other EU ministers rejected. A further concession was made by the US but by this time John Prescott had stormed out and the talks ran out of time as the EU continued to argue for a stricter limit.

Carbon Trading

The other main disagreement at COP6 was on the issue of carbon trading. There is much scepticism on the reliability of using carbon trading to aid reductions of greenhouse gas (GHG) emissions. Whilst proponents argue it will reduce costs and hence encourage greater action, its detractors have pointed out a number of problems.

The first is that GHG emissions per person in industrialised countries are much higher than elsewhere and it is those that need to fall most if long term climate protection is to happen. Then there is the problem of 'hot air' - that countries like Russia have an emissions target so lax that they can take virtually no action, and sell 'credits' and still meet their target. The third issue is uncertainty in 'baselines'. This particularly concerns the Clean Development Mechanism (CDM - carbon trading with developing countries) and was discussed in depth in SGR NL 20. A further issue is whether nuclear power should be allowed to be included under trading.

The negotiations centred on whether the amount of trading should be 'capped'. The EU, supported by several developing countries, felt it should - a level of approximately 50% was suggested - whilst the US and its allies felt it should not. The compromise proposed by the Chair suggested that the capping system should be minimal, but that nuclear power should be excluded from the CDM. The EU were willing to accept this provided the deal on sinks was strong.

Financing

Financing was the main issue of concern to developing countries, particularly for technology transfer and protection against climatic damage. Negotiations focussed on a deal which would set up a fund spending \$1 billion annually on these measures.

So where now?

COP6 nearly reached agreement - some negotiators said a few more hours would have been enough. It is a positive sign that negotiators chose to adjourn COP6 and reconvene in Bonn in May (in parallel with the technical meetings) rather than simply waiting until COP7 in November. It is also worth remembering that the Biosafety Protocol agreed last January took two attempts, so the break-down of these talks could be seen simply as a brief hiccup.

However, the election of President George W. Bush, a self-confessed 'climate sceptic', is likely to complicate matters. But even this may

not be a major obstacle. Corporate resistance to the Kyoto Protocol in the US is crumbling. Texaco have become the first US oil giant to withdraw from the Global Climate Coalition (the main lobby group against the Protocol) and some US farmers are now lobbying in favour of the Protocol realising the potential in energy crops and sinks.

So agreement in May does look likely. The problem is the agreement is likely to be weak. There probably will not be a cap on carbon trading - allowing industrialised countries to rely heavily on a system which may have significant loopholes and is untested. Further, significant inclusion of sinks (with all the problems of uncertainty and impermanence)

means that emissions targets from the US and Japan will no longer be cuts from 1990 levels. We clearly still have a long way to go before we see action on a scale to meet the climate convention's aim to 'prevent dangerous anthropogenic interference with the climate system'.

Dr Stuart Parkinson is vice-chair of SGR and a Research Fellow at the Centre for Environmental Strategy, University of Surrey.

The SGR Position Statement for COP6 (focusing on Carbon Trading) is available on our web-site¹.

¹<http://www.sgr.org.uk/climate.htm>

India's Nuclear Doctrine – The Responsibility of the Other Nuclear States

John Moore discusses India's new draft of its nuclear weapons policy

In 1999, following its weapons tests the previous year, the Indian National Security Advisory Board formulated a draft doctrine to govern its nuclear weapons posture. A BASIC (British American Security Information Council) paper, on Western nuclear policy, suggests that the nuclear policies of India and Pakistan can best be understood in the context of ...

"... the long-term pattern of US-led policy, which is to oppose proliferation until it happens and then reach an accommodation with the proliferator after the fact. Indian and Pakistani actions have neither resulted in new disarmament initiatives that include them, nor in significant penalties being imposed against them.

These two states sought to acquire nuclear status after the NPT [Non-Proliferation Treaty] was made permanent in 1995, an action which they felt allowed NWS [Nuclear Weapons States] to keep their arsenals indefinitely. India in particular had long declined to accept permanent 'second class status'. Their decisions also came after the CTBT [Comprehensive Test Ban Treaty] imposed upon them the responsibility of signing the Treaty for it to enter into force, resulting in extra

*pressure on their political processes. They regard the CTBT as discriminatory since the existing NWS are pursuing new methods of testing including computer modelling and simulation, above ground tests, and laser fusion to continue the development of new weapons. These methods are not available to India and Pakistan ..."*¹

India's draft nuclear doctrine was explained in a recent piece in the Pugwash Newsletter by a member of the National Security Advisory Board:

*"...India's nuclearisation has emerged out of the failure of the international community to institute disarmament half a century after nuclear weapons came into use and more than three decades after the five nuclear weapon states were bound by treaty obligations to do so."*²

The draft doctrine reaffirms India's no-first-use policy and promises that India will work for an international treaty banning the first use of nuclear weapons:

"There is no doubt that India's nuclear doctrine poses a serious challenge to the prevailing doctrine of offensive orientation and first strike strategic doctrines of the US/NATO

*and Russia. China has been demanding a treaty on no-first-use among the weapon states. The Chinese and Indian doctrines now indicate a counter view to the traditional aggressive doctrines of other nuclear weapons states who visualise use of nuclear weapons against non-nuclear threats India exercised restraint for decades through its policy of keeping the nuclear option open. Unfortunately this was not adequately recognised and the noose of non-proliferation without disarmament was pursued by the nuclear weapon states and their allies who themselves are nuclear weapon states in security terms if not in legal terms."*³

Notes

1. Daniel Plesch, "Anarchy In Action: Western Policy on Weapons of Mass Destruction", *Basic Paper* No. 31, April 2000, pp 2-3
2. Air Commodore Jasjit Singh, "Indian Draft Nuclear Doctrine: Some Reflections"
3. *Pugwash Newsletter*, Vol. 36, No. 2, November 1999. p 76-77

John Moore is a Lecturer in Mathematics at Leeds College of Technology and an SGR member.

Book Reviews

Alan Mayne reviews a selection of publications on various topics of concern to SGR

The Little Earth Book

James Bruges

Alastair Sawday Publishing, Bristol (2000)

ISBN 1-901970-23-X (pb), 141 pp, £4.99.

This book covers a wide range of environmental problems and other global problems, many of which threaten the future of humanity and Planet Earth. At the same time, it shows us that each of us has enormous potential to change things for the better. It gives striking examples of individuals thinking of positive new ideas, then putting them into practice. It shows that there is hope. The book can be read, either one or a few chapters at a time, or as a whole in one or two sittings. One of its strengths is how it shows that all the problems that we face are interlinked. For example, there are especially close interactions between environmental and economic-financial problems. Each of its over fifty chapters is short and outlines the main aspects of the problem area or aspect of life that it covers; in most chapters, an important source of further information is identified. The chapter topics include: the ozone layer, global warming, the Rio and Kyoto Conferences, 'contraction and convergence', water, banks, economic growth, poverty, Third World Debt, First World Debt, the World Trade Organization, feeding the world, organic farming, agribusiness, GM seeds, genetic engineering, patenting life, microbes, population, and nature in balance. Several of these topics are areas in which SGR is already very active. This book is very useful, both because it quickly introduces many people to a very wide range of important, mutually interacting, problems and possibilities, and

because it fits easily into a large pocket, so that it can be carried round from place to place.

Contraction & Convergence: The Global Solution to Climate Change

Aubrey Meyer

Green Books, Dartington, Totnes, Devon (2000)

ISBN 1-870098-94-3 (pb), 94 pp, £5.00.

This book, *Schumacher Briefing* No. 5, is about the dangers of global warming. It explains how they arose, what the international community is doing about them, and how humanity might, just possibly, prevent the worst dangers. Its author was a founder of the Global Commons Institute (GCI) in 1990, and gave the Keynote Address to the SGR Conference on 16 November 1996. The book focuses on the Contraction & Convergence (C&C) approach to limiting emissions of greenhouse gases, because, in the author's view, "C&C is the only proposal under serious discussion at present that stands any chance of uniting a majority of the nations of the world, rich and poor, behind a determined attempt to avert catastrophic climate change." The climate crisis is now recognised as serious by many if not most politicians, officials, scientists, and business people. The C&C approach has the following basic steps: (1) Reach an international agreement on how much further the CO₂ level in the atmosphere can be allowed to rise, before the climate changes that it produces become totally unacceptable. (2) Use an estimate of the proportion of the gas released, which is retained in the atmosphere, to calculate how rapidly current emissions need to be reduced to reach the target (Contraction). (3) Decide how to allocate the fossil fuel

consumption represented by these emissions. Ideally, the right to emit CO₂ should be allocated equally to all people, but over-consuming countries would need an adjustment period in which to reduce their emissions before universal Convergence is attained. After Convergence, each country would receive the same allocation of CO₂ emissions permits per head of its population at an agreed base year. Those countries not yet able to live within their allocation would be able to buy more permits from more energy-frugal countries. In this way, C&C would help to reduce the gap between rich and poor countries, and encourage developing countries to follow a low-fossil-energy path. C&C is proposed for pragmatic, not idealistic, reasons. In the UK, some members of the Government already support it, and the Royal Commission on Environmental Pollution (RCEP) has advised the Government to press for a future global climate agreement based on C&C and international trading in emission permits. Pages 91-92 contain the text of an "Open Letter to World Leaders" that readers are invited to sign.

The Weather: The Truth About the Health of Our Planet

Anthony Smith

Hutchinson, London (2000)

ISBN 0-09-180090-0 (pb), xviii + 285 pp.

This book is about the natural fluctuations of weather on Planet Earth – the seasons, different type of extreme weather, and historical changes – but it also explores possible effects of human activities on the weather. Among natural events, temporary climate changes, sometimes quite drastic, can be caused by volcanic eruptions, meteorites and asteroids, and

fluctuations in solar radiation and the distance of the Earth from the Sun. The onset and cessation of Ice Ages are still imperfectly understood. Nevertheless, the author agrees with the prevalent view today that important climate changes, including global warming, have been brought about by the emission of CO₂ and other greenhouse gases. He agrees that we ignore these changes at our peril, even though they must be considered in relation to natural weather changes also. This book is very useful for those wishing to study climate change in its widest form; it is written in a clear non-technical style suitable for general readers as well as scientists and technologists.

Climate Change Mitigation: An Indian Perspective

**Development Alternatives
Newsletter**

(November 2000) Vol. 10, No. 11, 20 pp.

This journal is useful for giving us insights into Indian viewpoints on climate change. Its leading article outlines this perspective, with special reference to climate change and economic growth, India's proactive role in the Climate Change Convention, India's vulnerability to climate change – especially to its coasts and islands, Indian greenhouse gas emissions, the Indian energy sector, and India's efforts to reduce climate change. Topics of the other articles include: expectations from COP 6, the potential for reducing climate change and facilitating this reduction, preventing greenhouse gas pollution, the Global Reporting Initiative (GRI) as a path to corporate accountability, and the effects of the Orissa cyclone.



First to Third Annual Reports of UK Round Table on Sustainable Development

Department of the Environment, Transport and The Regions (DETR), London (1996-1998).

The first report (April 1996) included recommendations on freight transport, the UK energy market, and environmental management and audit. Its June 1996 supplement defined a sustainable transport sector. The second report (March 1997) reviewed progress on these recommendations, and included further recommendations on: barriers to transfers within passenger and freight journeys, obstacles to introducing more sustainable urban transport, housing and urban capacity, fresh water, and land use planning controls over energy developments. It also presented the Round Table's general conclusions from its first two years of work, and described the working methods that it has evolved. The third report (March 1998) included full recommendations on strategic issues relating to the use and development of indicators, with special reference to issues of policy and communication, and economic regulation. It briefly summarised work on: indicators for the UK energy market, integrating biodiversity into environmental management systems, and sustainable agriculture.

Science, Technology and Innovation in the New Economy

OECD Policy Brief (September 2000) OECD, Paris, 12 pp.

This *Policy Brief* explores the role of science, technology, and innovation in today's economy, and discusses the role of government in promoting scientific and technological progress for economic growth and greater social well-being. Government must increasingly help businesses and

consumers to adapt to the demands and opportunities of the new economy. It must also be active in investing in fundamental research and ensuring stakeholders' involvement in policy design and implementation. This report covers various science policy issues of interest to SGR.

3rd Millennium: The Challenge and the Vision

Ervin Laszlo

Gaia Books, London (1997) ISBN 1-85675-068-X (pb),

155 pp, £9.99.

This book expresses the concerns of the Club of Budapest, whose members include writers, artists, scientists, and creative philosophers. The Challenge that it presents is that people all over the world need a new global awareness for the new millennium, to regain the power coming from taking local and global responsibility, and celebrating the richness of cultural and environmental diversity. The Vision is that we meet the Challenge with deeper intellectuality, intuition, and spiritual awareness. Such creative development could generate change faster than our genetic evolution. The author's call for a new planetary consciousness and a less self-centred human spirit is part of his action plan to establish an interdependent, peaceful, cooperative society. The book ends with the Club of Budapest's "Manifesto on the Spirit of Planetary Consciousness". It shows, in a valuable way, how SGR members could express and address their concerns in a much wider context than science, engineering, and technology alone.



CHAOTICS: An Agenda for Business and Society in the 21st Century

Georges Anderla, Anthony Dunning & Simon Forge

Adamantine Press, London (1997)
ISBNs

0-7449-0136-7 (hb) & 0-7449-0137-5 (pb), xiii + 225 pp.

The authors of this book strongly feel that human progress does have a positive future, but that we need to redraw our picture of reality, using the concepts of chaotics, to give us a truer understanding of real-world processes. 'Chaotics' is the name that the authors give to the combined mathematical theory of chaos and complexity that they envisage. They suggest various ways of applying chaotics to contribute to the improvement of the human situation. The book's last chapter summarises some of the key global problems, some of the major areas covered, and some of the pathways towards solutions offered. The authors make some very brave and interesting initial attempts to address some of these problems and provide a wide range of valuable insights, but their work should be viewed as a promising starting point for further research to develop workable practical applications of chaotics.

Excellence and Opportunity: A Science and Innovation Policy for the 21st Century

Department of Trade and Industry

The Stationery Office, London (July 2000)

ISBN 0-10-148142-X (pb), iii + 57 pp, £11.60.

This White Paper presents the UK Government's latest science policy. It reaffirms the need to build on the UK's existing science base, but also

apply the results of British research to turn ideas into products which can improve our lives. The Government confirms its clear role to fund basic curiosity-driven research, and will provide additional funds for it in several different ways. There will be special emphasis on public-private partnerships between researchers and industry, and international links between scientists and between businesses. The Government will extend opportunities for innovation in several specific ways. It aims to combine the highest possible standards for consumer safety and health with open markets to reward innovators. It will improve the provision of scientific advice to its own Departments. There is much merit in these proposals, but we will need to 'wait and see' to find out if they go far enough, for example if sufficient funds will now be provided for British science, especially in universities, and if enough support will be provided, not only for 'big science', but also for 'small science' in a wide variety of fields – some 'unorthodox' – from which some of the now unpredictable 'breakthroughs' of the future can be expected to come.

Science and the Public: A Review of Science Communication And Public Attitudes to Science in Britain

Office of Science and Technology & The Wellcome Trust

The Wellcome Trust, London (2000)

ISBN 1-841290-25-4 (pb), 136 pp.

This report presents research, sponsored jointly by the Office for Science and Technology (OST) and the Wellcome Trust, to help science communicators think about the information needs of their audiences. Its authors hope that it will encourage communicators to reach out to existing audiences and to those who have not yet become involved in the

issues raised by modern science. They hope that scientists and science communicators will consider how they can contribute to informing the debate about those aspects of science of concern to the public, and contribute to the wider debate about the development of science communication policy and practice at the national level. They intend that this report opens a short period of consultation within the science communication community to discuss the implications of this work. It seems that many SGR members could usefully contribute to the communication and discussion processes presented here, and that in turn other participants in this process could become interested in SGR's work and willing to contribute to it.

Sacred Cows and Golden Geese: The Human Cost of Experiments on Animals

C. Ray Greek & Jean Swingle Greek

Continuum, New York & London (2000)

ISBN 0-8264-1226-2 (hb), 256 pp, \$24.95.

This book argues against medical experiments on animals on **scientific** grounds. Its authors, from the USA, are a medical doctor, who practises anaesthesiology, and a veterinarian. They gather massive amounts of evidence, supported by very many references to the medical literature, which seriously weaken the case for animal experimentation. They argue that such animal experiments are unnecessary, inaccurate, expensive, and, unintentionally, harmful to the human species. They find that many medicines, which are found to be effective against specific diseases in certain species of laboratory animals, are not only ineffective against the same illnesses in people, but often have harmful, sometimes devastating, side effects on human patients; thalidomide is a well-known example.

In the opposite direction, many remedies beneficial to humans are found to be harmful to some other animals. These phenomena can occur even where the animal species, on which tests are made, are other primates, such as monkeys, or even apes closely related to humans. In fact, there are many instances where a given drug or treatment has different effects on different types of people, according to their sex, race, age, allergies, or other specific characteristics. In Chapter 6, the authors point out that there are many purely human-based approaches to medicine that have proven their value, such as: clinical studies of human patients, *in vitro* (test tube) research on human cells and tissues, autopsies, epidemiology, mathematical modelling and computer-assisted research, genetic research, diagnostic

imaging, and surveillance of the effects of drugs used in human medical treatments. Chapter 7 discusses the origins of most of the medications found to be effective in treating people; they include: the use of new substances found in nature, different curative values found in existing medicines, modifying the chemical structures of existing medications, and designing new medications from first principles to meet specific requirements. Unfortunately, the authors argue, the introduction of such medications is often unnecessarily delayed due to a mistaken belief that they should be tested on animals first. Chapters 8 to 10, respectively, give many illustrative examples from cancer, cardiovascular diseases, and AIDS. The authors also present some evidence that the 'benefits' of animal

experimentation are a 'myth', which is perpetuated by an immensely profitable medical establishment, especially strong in the USA, that includes drugs companies, universities, medical faculties, and even some individual researchers. As a non-medical scientist (though I am a statistician), I am not qualified to judge whether the authors have shown that animal-based medical researches *never* have practical value, but I feel sure that they have proven the case for a good, hard rethink of many procedures taken for granted in contemporary medicine. They have done humanity an immense public service in this respect, and highlighted yet another vitally important area for exercising social responsibility in science.

Communicating with SGR

Electronic Communications

New SGR 'Web-board'

SGR has recently set-up a 'web-board' forum to facilitate discussion between members (and non-members) on ethical issues in science and technology. The web-board can be found at:

<http://mattasp.ewebcity.com/db/sgrforum/>

To view the discussions simply go to the web-site and click on the subjects which interest you. If you would like to contribute to the discussions, you will need to click on 'register' first and follow the instructions. If you have any problems, please email Phil Webber on PhilW@sgr.org.uk.

The advantages of the web-board over email are that the entirety of any discussion can be viewed easily (rather than just the latest message), and that those who do not want to be involved in the discussion do not get large numbers of unwanted emails.

The first web-board discussions were initiated during the International

Week of Science and Peace (see p2). Following the controversial decision by Nottingham University to accept funding from British American Tobacco (see p4), a new discussion will begin shortly on the topic '**How should science be funded?**'

Email-list

Meanwhile, our email-list (which currently has about 150 SGR members on it) will continue as a conduit for passing on items of news to other SGR members.

Currently this is also called 'sgrforum'. However, to avoid confusion with the web-board, we will be changing this name in the near future. To minimise disruption, this will be timed to coincide with a software upgrade by our internet service provider (Greenet) which will result in changes to the procedure for sending messages and subscribing to the list. Current subscribers will be informed when this is to happen. New subscribers should contact the SGR office on:

sgr@gn.apc.org

Until the changes happen, please continue to use the old procedures.

For sending messages, send an email to:

sgrforum@gn.apc.org

To subscribe to the list (if you are not already on it), send an email to:

listproc@gn.apc.org

with the following text:

```
subscribe sgrforum <firstname>  
<lastname>  
End
```

The subject line should be left blank.

Other email contact

SGR has a number of specialist email addresses to use to contact particular people within SGR or for particular issues. These can be found on our web-site: <http://www.sgr.org.uk/>

Letters

Letters for inclusion in the Newsletter should be sent either by conventional mail to 'The Newsletter Editor' at the SGR address given on the back page, or by email to newsletter@sgr.org.uk with 'SGR Letters page' in the title. Letters may be edited in the interests of clarity or brevity.

Conference Reviews

Pugwash Discussion Meeting: 'Return of Star Wars: A Threat to Peace?'

Stuart Parkinson

This half-day meeting focussed on the proposed US National Missile Defence (NMD) system: the rationale behind it and the possible consequences it might have for global arms control. It took place at Birbeck College in London in December and was addressed by three speakers: Air Marshal Sir Timothy Garden, Professor Richard Garwin and Dr Alexander Kononov.

Professor Garwin was the first to address the meeting. He is a Senior Fellow for Science and Technology at the Council for Foreign Relations in New York and a former member of the US President's Science Advisory Committee.

He began by outlining the purpose of the proposed NMD system and its basic set-up. The idea of the system is to defend against a limited number of long-range ballistic missiles. The significance of the term 'limited' is that it could only be used to stop an attack consisting of tens of missiles from a small nuclear nation. The USA has three nations in mind against which this system could defend: North Korea, Iraq and Iran. Whilst the US has been concerned about these countries for some time, its fears were heightened over North Korea after the test launching of a rocket known as TD-1 in 1998.

The basic set-up of the NMD system is intended to be a set of 'hit-to-kill' interceptor missiles which would destroy the incoming missiles by colliding with them. The other components of the NMD would be an early warning system, including satellites, and a sophisticated

computer system for coordinating the response.

Prof Garwin then went on to explain why he believed the system would be largely ineffective. The main reason is that it would be very easy to deceive. For example, balloon decoys could be deployed which are both cheap and effective. Another method would be for the incoming missile to split into 'bomblets'. This would drastically increase the number of targets and overwhelm the defences. His arguments are given in more detail in a publication by the Union of Concerned Scientists called 'Countermeasures' (which can be obtained from their web-site: <http://www.ucsusa.org/>).

Dr Kononov, the President of the Institute for Strategic Assessments in Moscow, was next to address the meeting. He began by discussing Russian opposition to the system. Whilst it was obvious that the NMD could not be used to defend against a ballistic missile attack from Russia, their concerns are more over the development of the early warning system and the missile co-ordination system which *could* be used against Russia. It is exactly for this reason that the development of such systems is illegal under the 1972 Anti-Ballistic Missile (ABM) Treaty. If this treaty is undermined, he argued, then other similar treaties (eg the START treaties on nuclear arms reduction and the Non-Proliferation Treaty) are likely to lose credibility. Hence deployment of the NMD is likely to start a new global arms race.

Dr Kononov then went on to point out that the NMD only guards against the relatively minor threat posed by long-range ballistic missiles. It does not guard against threats such as: bombs smuggled into the country; cruise missiles; short-range missile attacks from small ships or planes; or indeed any threat to US interests outside US territory. Hence any

'rogue' state or organisation would find little deterrence in the system.

He concluded that it would be far more effective for the USA to seek a political solution to military threats rather than proceed with this expensive programme.

The final speaker was Sir Timothy Garden, Defence Editor of 'The Source' and a former Director of the Institute of International Affairs (Chatham House) in London. Sir Timothy echoed many of the points made by the previous speakers and, in particular highlighted the situation with regard to China. In theory, given the current proposals, the NMD could be used to defend against an attack from China. Unsurprisingly, China is concerned about this and so would likely increase the size of its nuclear arsenal. In turn India would increase its arsenal. And then Pakistan would increase its. This would considerably heighten political tensions in the area.

He also highlighted the UK role in the NMD. In particular, this would be an upgrade to the Fylindales centre in Yorkshire as one of the early warning centres for the system. So far, the Labour government has stayed neutral on the issue of the NMD, whilst the Conservatives supports it and Liberal Democrats oppose it. Several countries in the EU also oppose the NMD.

The discussion which followed mainly focussed on the question of why was the NMD being seriously considered by the US government, if it is likely to start a new global arms race, and wouldn't work anyway? The main reason seems to be political. The original proposal and much of the support for the NMD comes from Republicans, who see it as a way to show themselves as strong on defence. There is particular support from senators whose states would benefit from the extra research

funding such a programme would produce.

However, the speakers did point to some positive signs that the NMD may not get the go ahead. For example, the Joint Chiefs of Staff are not happy with the proposal due to

concerns about its ineffectiveness and cost. Further, Dr Konovalov pointed out that most of the arms limitation agreements have been carried out under a Republican administration, ie, the ABM treaty in 1972 under Richard Nixon and START I & II under George Bush senior.

Dr Stuart Parkinson is vice-chair of SGR.

Future conference reviews will include the BAAS 'Festival of Science'

Events

Every Saturday

Vigil Calling for the Release of Mordechai Vanunu

Noon - 2.00 p.m., outside the Israeli Embassy in London at the junction of Kensington High Street and Kensington Court. Organised by and further information from the Campaign to Free Vanunu and for a Nuclear Free Middle East.

Tel: 020-7378 9324

E-mail:

campaign@vanunu.freereserve.co.uk

Web: www.vanunu.freereserve.co.uk

8 February

One World Works – for More than Profit

Annual information and careers options event at Cambridge University.

SGR has again been invited to participate. If you can help, or for further info, please contact Kate at the SGR Office.

Tel: 07 771 883 696

E-mail: KateM@sgr.org.uk

21 February

London Alternative Careers Fair

Imperial College, South Kensington, London SW7. 12pm-7pm.

SGR has been invited to participate. If you can help, or for further info, please contact Kate at the SGR Office.

Tel: 07 771 883 696

E-mail: KateM@sgr.org.uk

28 February

Energy Globe - the Award for Sustainable Energy Initiatives

Presentation ceremony in Linz, Austria. Further info from the Oberösterreich Energiesparverband.

Tel: + 43 732 6548 4386

E-mail: energy.globe@esv.or.at

Web: www.esv.or.at/energyglobe/

7 March

The MANA Players in a Concert for Peace

Blackheath Halls, London SE3. Tickets: £7/£8.50. Organised by Musicians Against Nuclear Arms (MANA)

Tel.: 020 8455 1030.

16 - 25 March

National Science Week

Organised by and further info from the British Association for the Advancement of Science.

Tel: 020-7973 3074

E-mail: maria.roy@britassoc.org.uk

Web site: www.britassoc.org.uk

4 - 6 May

No Star Wars: An International Conference to Keep Space for Peace

Leeds. Organised by Yorkshire CND/SGR/ Global Network Against Weapons and Nuclear Power in Space. This event will include SGR's AGM (see back-page)

Tel: 07 771 883 696

Email: KateM@sgr.org.uk

8 - 10 May

Sustain 2001 - World Sustainable Energy Exhibition and Conference

Amsterdam, The Netherlands.

Web site: www.sustain2001.com

9 - 11 July 2001

Exploring Cyber Society II: Dissent and Deviance in the Information Age

International Conference in Newcastle. Organized by the School of Social, Political and Economic Sciences, University of Northumbria. E-mail: lorna.kennedy@unn.ac.uk Web: www.unn.ac.uk/corporate/cybersociety/

16 - 20 July 2001

Detecting Environmental Change: Science and Society

Conference at Senate House, London WC1 organised by NERC Centre for Ecology and Hydrology. Further info. from Catherine Stickley

Tel: 020 7679 5562.

E-mail: c.stickley@ucl.ac.uk

Web: www.nmw.ac.uk/change2001

17 - 23 July

Consumption, Everyday life and Sustainability Summer School

Summer School at Lancaster University, organised by the Sociology Dept. For more info:

Email: j.bowker@lancaster.ac.uk

www.comp.lancs.ac.uk/sociology/esf

If you are attending any of these events, don't forget to take along a few SGR leaflets etc.

Join SGR - as a Member or an Associate

You can become a member of SGR if you are a scientist in the broad meaning of the word. Our members include biologists, chemists, engineers, geographers, mathematicians, physicists, psychologists, sociologists, students, teachers and people working in electronics and computing.

If you agree with SGR's aims and want to support our work, but are not a scientist, you are invited to become an associate member.

I enclose an annual membership subscription of £...

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Announcing...

SGR Conference 2001

No Star Wars: An International Conference to Keep Space for Peace

Jointly organised with Yorkshire CND and the Global Network Against Weapons and Nuclear Power in Space

May 4th - 6th, 2001

Leeds

The conference will be part of a weekend of events to give academics and peace activists an opportunity to discuss the proposed US National Missile Defence (NMD) system and UK involvement with the system.

Friday 4th. Press conference and demonstrations at the Fylingdales and Menwith Hill bases, which would form part of the NMD system.

Saturday 5th. Formal Conference, 9am - 6pm. Lectures will cover a range of political, technical and legal aspects relating to the NMD system. Dr Philip Webber, Chair of SGR will be a speaker.

Sunday 6th Campaign meetings.

SGR's AGM will also take place during the weekend - full details will be announced shortly. For more information, please contact Kate Maloney at the SGR Office - see left for details

This edition of the Newsletter was edited by Alan Mayne and Stuart Parkinson with help from Kate Maloney. The opinions expressed do not necessarily represent those of SGR.

The next newsletter will be a Special Issue on Arms and Arms Control. Articles are welcomed from both members and non-members. Please send articles (preferably in Word 97) to newsletter@sgr.org.uk or the postal address for SGR: see left.