

event of global compass, with both papers and debates generally of a high standard — indeed the only grumbles which we heard concerned the shortness of time for discussion (e.g. under the auspices of CMDC).

The proceedings opened with ministerial and other statements of which a selection largely constituted the Editorial Section of our latest Winter issue (18[4], pp. 289–96, 1991), and included the Global Energy Charter to be presented to the United Nations Conference on Environment & Development. They also included a keynote address by Dr Hermann Scheer, MP, President of Eurosolar, Bonn, which was published on pp. 357–8 of that same issue. Thereafter followed three key commentaries under the title of 'The Crucial Issue: Environmental Energy Impacts', the first of which, by Professor Bert Bolin, Chairman of the Intergovernmental Panel on Climate Change (IPCC), was published as the leading paper in that issue, namely *Environmental Conservation*, Vol. 18, Nr. 4, pp. 297–303, 1991, with 6 figs and 2 tables.

The regular, numbered sessions and their principal chairpersons were as follows: (1) Environmental and Efficiency Improvements with Carbon Energies, Professor Bernard Giovannini, Director of the International Academy of the Environment, Geneva, Switzerland; (2) Fission and Fusion Problems and Hopes, Dr M. Shrinivasan, International Atomic Energy Agency (IAEA), Vienna, Austria; (3) Improvements for Conventional Clean Energies, Professor Bent Sørensen, Lyngby, Denmark; (4) Newer Clean Energy Options, Mrs Josephine Andorfer, of the United Nations Economic Commission for Europe, Geneva, Switzerland: these included the paper on the Solar-Hydrogen Energy System, by Professor T. Nejat Veziroglu & Franco Barbir, which was published on pp. 304–12 of our latest Winter issue; (5) Low Pollution Transportation, Dr Hans Asper; (6) Clean Energy Transmission/Grids, Dr Jean Kenel, of EDF/CIGRE, France; and (7) Energy and Environmental Costs, Dr Olav Hohmeyer, Fraunhofer Institute, Karlsruhe, Germany.

Thereafter was held a novel 'Bankers' Roundtable on Sustainable Development, led by a memorably encouraging paper on 'Sustainable Development Bank Initiative', by Antony L.T. McCammon, of Zürich, Switzerland [which led to later publications in our Journal and his contributions as our representative in Rio], followed by an excellent dinner addressed by an amusing American ex-Congressman.

The final morning was occupied by a long session of Conclusions and Recommendations, impressively chaired by Professor Sørensen, with, in the afternoon, an 'Extra Lecture' on 'The Thermodynamics of Fuel-fired Powerplants without Exhaust Gases', by Professor Evgeni I. Yantovskii, of the [then still] USSR Academy of Sciences. This was followed by a final press conference at which we heard of our Conference being referred to in a UN circle as an 'historic event', which further stimulates our idea of encouraging a book on it. For the conclusion seems inescapable that, if anything like the funds and effort which have been lavished especially on nuclear sources had been given instead to other sustainable forms of clean energy as discussed in this Conference, our world would be in a far better state than is now, alas, the case. However, much could still be saved by due action in time, and such a book, publishing the main papers and ideas emanating from this auspicious Conference, could be at once valuable and important.*

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* Meanwhile the Proceedings can be ordered from CMDC, POB 928, CH-8055 Zürich, Switzerland. — Ed.

INTERNATIONAL CONFERENCE ON 'ANTARCTICA, THE ENVIRONMENT, AND THE FUTURE', HELD IN THE UNIVERSITY OF GENEVA, SWITZERLAND, DURING 23 & 24 APRIL 1992

The International Academy of the Environment and the Geneva International Peace Research Institute organized this two-days' Conference on the Antarctic which took place in Science II of the University of Geneva on 23–4 April 1992. Speakers included Dr David Drewry (the new Director of the British Antarctic Survey), Dr Roger Gendrin (Director of the newly-organized French Institute for Polar Research and Technology), and other leading Antarctic scientists as well as diplomats and administrators.*

The Conference both reviewed recent scientific research in the Antarctic and discussed the future development of Antarctic research activities. In addition to present accomplishments in monitoring the ozone 'hole', determining past climate and atmospheric composition from ice-cores, detecting global pollution, collecting meteorites, and analysing Antarctic contributions to global climate change, ocean circulation, and sea-level rise, there are new scientific challenges in astronomy, solar-terrestrial physics, geophysics, and biology, towards which Antarctic research could make important contributions.

The second day focused on Antarctica and its management, including descriptions of the Antarctic Treaty System and the problems of tourism and fishing in far-southern waters. There was a general feeling that significant change was needed in the management of Antarctic research, although not in the Antarctic Treaty mechanism itself. In particular, the present coordinating mechanism through the Scientific Committee on Antarctic Research (SCAR) was felt to be under-funded and inadequate for future tasks of developing better-coordinated and more international programmes. For instance, it was stated that SCAR lacks resources to convene international groups of experts to design international research programmes in which many countries can participate. There were suggestions for an International Antarctic Science Foundation and for a permanent secretariat for the Antarctic Treaty System (though it should be noted that a proposal for the latter narrowly failed to be accepted at the last consultative meeting of the Antarctic Treaty Parties).

The emphasis of the Conference was clearly on science, and there were some differences of opinion as to the desirability of diverting some of the scarce resources available for 'cutting edge' research in order to deal with new environmental impact assessments and environmental monitoring. It was evident that there was some tension between scientific research workers and environmentalists, and that the correct balance of environmental regulation and cost-effectiveness had still to be worked out and applied. It was also acknowledged that the 'Antarctic community' had not communicated effectively with the outside world and needed to be more open as well as to educate the public more effectively than hitherto. The world has become increasingly interested in the Antarctic because of its critical role in global systems and its value as one of the best places to measure human impacts on the global environment. The UN General Assembly has requested reports on the state of the environment in Antarctica; it would be desirable for the Antarctic Treaty parties to cooperate with the United Nations agencies in preparing those reports.

* Most sadly Lord Shackleton, who it had been hoped would open the Conference and participate throughout (see the **Important Prospect** by Dennis Thompson, published on page 378 of our last Winter issue), was unable for health reasons to come to Geneva. — Ed.

Economic pressures and the end of the 'cold war' will probably encourage increasing internationalization of Antarctic activities, although individual bases will probably continue under national management. Eastern-block countries are unable to maintain their previous level of Antarctic effort, and the less-developed countries with a scientific interest in the area cannot afford the cost of independent research stations; nor is further multiplication of stations in Antarctica environmentally desirable. Future patterns of Antarctic research will not be able to follow those of the past. It was clear from the participation in this Conference that a new generation of administrators is taking over national Antarctic programmes, and this should facilitate further change.

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INTERNATIONAL COMMITTEE OF THE RED CROSS
MEETING ON PROTECTION OF THE ENVIRONMENT IN
TIME OF ARMED CONFLICT, HELD IN GENEVA,
SWITZERLAND, DURING 27–29 APRIL 1992

The International Committee of the Red Cross (ICRC) is world-renowned for its development, promotion, and monitoring, of the international humanitarian law component of the law of war or armed conflict.* The relevant basic international legal instruments are: (a) Hague Conventions II of 1899 and IV of 1907 on the Laws and Customs of War on Land; (b) Geneva Convention IV of 1949 Relating to Protection of Victims of Armed Conflicts; and (c) Protocols I and II of 1977 Additional to the Geneva Convention of 1949.

The Gulf War of 1991 has, once again, thrust into the limelight the issue of environmental protection in times of armed conflict. As one result of this renewed interest, the 46th United Nations General Assembly (*via* its Decision No. 46/417 of 6 December 1991) indicated its interest in ICRC activities on the subject. Spurred in part by that interest, ICRC brought together on this occasion some 32 legal, diplomatic, military, and environmental, experts from about a dozen countries and six intergovernmental agencies. The participants reviewed the strengths and weaknesses of the relevant existing instruments (those named above as well as a number of others gleaned from the laws of war, of arms control and disarmament, and of environmental protection) and considered the need for new ones. The discussions were wide-ranging and informal, with ICRC seeking only guidance.

It seemed clear that the growing public awareness of environmental concerns in recent years has played an important role in the issue under discussion, inasmuch as one of the fundamental concepts of the law of war, dating back to Hague Convention II of 1899, is that the inhabitants and the belligerents remain under the protection and the rule of 'the dictates of public conscience'.

Protection of Environment

A number of participants argued persuasively that the existing body of relevant treaties sufficed to protect the environment in time of armed conflict. What was needed was that these treaties be more widely adopted, that they

* In international law, a distinction is made between declared armed conflict (for which the term 'war' is generally reserved) and non-declared armed conflict; and also between international armed conflict and non-international armed conflict.

be the theme of more intense educational efforts (aimed at both the military and civil sectors) than hitherto, and that they be subject to improved systems of monitoring and compliance. Whether or not new legal instruments would be desirable remained unresolved. Moreover, the environmental (and other humanitarian) implications of the use of nuclear weapons appeared to be too politically sensitive an issue to broach.

Although the term 'environment' itself did not, until quite recently, enter into the vocabulary of international humanitarian law or other aspects of the law of war, at least some level of environmental protection has clearly existed within this context throughout the present century. This has been so *via* a variety of personal and property safeguards that were extended to neutral states and to civilians in the belligerent states.[†] Even the concept of 'sustainable development', so much in vogue at present, was codified by Hague Convention II of 1899, in legislating that an occupying state can only regard itself as usufructuary of the forests and agricultural works belonging to the hostile state. It must be stressed here that international humanitarian law is not subject to suspension in time of armed conflict; nor is it considered to be based on reciprocity, being widely accepted as an obligation to the international community in its entirety.

International Humanitarian Law

The most specific (and legally innovative) inclusion of the environment under the heading of international humanitarian law — thereby unequivocally placing it within the domain of ICRC — was enunciated in Protocol I of 1977, *via* which it is prohibited to employ methods or means of warfare which are intended, or may be expected, to cause widespread, long-lasting, and severe damage to the natural environment. As for the Gulf War of 1991, it was suggested that an even more readily applicable stricture derives from Geneva Convention IV of 1949, *via* which a grave breach (*i.e.* a war crime) occurs through extensive destruction and appropriation of property when it is not justified by military necessity and is carried out unlawfully and wantonly.

Various suggestions were offered by the participants. For example, it was urged that all world natural (and cultural) heritage sites established under the World Heritage Convention of 1972 be formally designated as demilitarized zones, and treated accordingly. It was proposed that future review conferences of environmental protection treaties clarify their applicability to the military sector in times of both peace and armed conflict, and that the parties should consider expanding their coverage as necessary. It was recommended to ICRC that they should prepare a model code of environmental conduct that would be available for insertion into the military manuals employed in the training and guidance of armed forces.

ICRC is expected to issue its report in time for submission to the 47th United Nations General Assembly in late 1992.

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[†] The environment was considered at this meeting to fall into one of three categories: that belonging to the states involved in an armed conflict; that belonging to neutral states (third parties); and that in domains beyond any national jurisdiction (*e.g.* the high seas). Whether the environment *per se* enjoys legal protection was not at issue at this meeting.