

Advisory Group on Greenhouse Gases Established Jointly by WMO, UNEP, and ICSU

This Advisory Group has been established to ensure adequate follow-up of the recommendations of the International Conference on the Assessment of the Role of Carbon Dioxide and other Greenhouse Gases in Climate Variations and Associated Impacts, which was held in Villach, Austria, in October 1985. 'Greenhouse Gases' is an informal term that is used for all radiatively active constituents in the atmosphere which collectively tend to increase the temperature of the lower atmosphere after the manner of a greenhouse or glasshouse.

The Advisory Group on Greenhouse Gases (AGGG), which met at the WMO Headquarters in Geneva on 1–2 July 1986 under the chairmanship of Professor F.K. Hare (Canada), strongly supported the statement emanating from the 1985 Villach conference, that the effects of increases in carbon dioxide (CO₂) and other trace-gases which cause the 'greenhouse effect' (such as methane, chlorofluorocarbons [CFCs], and nitrous oxide) could produce increases in global mean temperature of between 1.5° and 4.5°C by the end of the first half of the next century, when the corresponding rise in sea-level (largely because of the expansion of ocean water) might reach between 20 and 140 centimetres. The results of ongoing research presented since the Villach Conference (such as the dramatic decreases in the ozone layer over the Antarctic* and the asymmetry in the responses of the ocean around Antarctica and of the northern seas around the Arctic) heightens the urgency of the concern expressed in Villach.

The AGGG will carry out two main tasks: (1) biennial reviews of international and regional studies related to greenhouse gases, and (2) aperiodic assessments of the rates of increases in the concentrations of greenhouse gases and of the effects of such increases. The Advisory Group was particularly conscious of the need to develop a mechanism that would provide information on recent developments to a wide audience.

The AGGG stressed the need to improve our basic understanding of the climatic system and its responses to both natural and Man-made forcing mechanisms. As the ozone depletion problem* and the greenhouse gas problem† are interlinked through the impact of the same chemicals, †† the Group urged that the study of these two questions be combined.

In the light of the Villach recommendations for further studies of the socio-economic impacts of climatic change, it was suggested that studies should be carried out in a number of areas such as the monsoon region of S.E. Asia, the

Great Lakes region of North America, Europe, and the circumpolar region in the Arctic.

The AGGG suggested that there are two preventive measures which should be considered to alleviate the problem: (i) energy conservation measures, especially those increasing the efficiency of energy use, and (ii) substitution for CFCs in a number of uses for which alternatives are available.** This latter measure would help because the CFCs have not only become the second most important group of greenhouse gases after CO₂, but they also have deleterious effects on the ozone layer. In this connection, consideration should also be given to the need for developing international agreements for the control of the CFCs.‡

The members of the AGGG are F.K. Hare (Canada, Chairman), B. Bolin (Sweden), G. Golitsyn (USSR), G.T. Goodman (UK), M. Kassas (Egypt), S. Manabe (USA), and G.F. White (USA). The Chairman of the Villach Conference, J.P. Bruce (Canada), participated in the first meeting of the AGGG.

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* See e.g. Ralph Kazarian's 'Alarming Depletion of Ozone Layer Above Antarctica: Scientists Seeking Cause', published on page 178 of our Summer issue, and Professor F. Sherwood Rowland's Guest Comment on pp. 193–4 of our Autumn one.—Ed.

† See the short communication entitled 'Expectations and Problems of a Warming World', published on pp. 262–3 of our latest issue.—Ed.

†† See the note entitled 'Links Between Ozone Depletion and the Greenhouse Effect' on page 364 of this issue.—Ed.

** See the 'DuPont Position Statement on the Chlorofluorocarbon–Ozone–Greenhouse Issues' on pp. 363–4 of this issue.—Ed.

‡ See the report by Dr Joseph P. Glas (following his 'Dupont Position Statement on the Chlorofluorocarbon–Ozone–Greenhouse Issues' published on our two preceding pages) of the 'First Session of the Ad Hoc Working Group of Legal and Technical Experts for the Preparation of the Protocol on Chlorofluorocarbons to the Vienna Convention for the Protection of the Ozone Layer (Vienna Group)' to be published in the Conferences & Meetings section of our next issue.—Ed.

Scientists Obtain New Midwinter Data on Physical Processes and Life in Ice-covered Antarctic Sea

An international team of scientists aboard a German research ship has gathered previously unattainable information about physical processes and plant and animal life in an ice-covered sea off Antarctica in midwinter. The scientists said their findings will require 'significant revision' of current ideas of physical and biological processes during the sunless Antarctic winters. Despite extremely low levels of sunlight, biologists reported observing healthy plant and animal life which 'had adapted well to the harsh winter environment in and under the ice-sheet'.

In another unexpected finding, Dr Arnold L. Gordon, an American scientist who had been on the research ship, said that preliminary data suggest there is a much greater flow of heat from the ocean to the atmosphere than had previously

been thought. Dr Gordon, a physical oceanographer at the Lamont–Doherty Geological Observatory in Palisades, N.Y., said 'The coupling between the ocean and atmosphere is greater than we thought, and plays a much more significant role in the global climate system'.

Until this expedition, knowledge of winter conditions in the southern oceans had been limited to inferences from summer observations, to data acquired during the 1981 US–USSR investigation of the northern third of the Weddell Sea ice, to observations from a few coastal stations, and to data obtained in 1912 during a cruise of the German ship *Deutschland*.

The 350-feet (ca 107 m)-long West German ship *Polarstern*, with 50 scientists aboard, left Bahia Blanca, Argen-

tina's third largest port, on June 24 and arrived in Cape Town, South Africa, on September 17 after a three-months' scientific cruise. Her arrival at the South African port completed the first half of the Winter Weddell Sea Project coordinated by the Alfred Wegener Institute of Bremerhaven, West Germany. The Weddell Sea is a three million square miles (7,770,000 sq. km) embayment of the coast of Antarctica lying south-east of the tip of South America.

In addition to 14 American research workers aboard the ship, there were 36 other oceanographers, ice physicists, meteorologists, and marine biologists, from West Germany, Great Britain, Austria, Switzerland, and Argentina. Although the distance from the ice-edge to the coast of the

continent is about 800 miles (1,280 km), the ship had travelled 3,400 miles (5,400 km) on a zigzagging course to collect samples and make oceanographic measurements.

The Expedition is now on its second phase, focusing on bottom-water formation and research into biological development on the coastal shelf of the eastern Weddell Sea in early spring.

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Slovak Union for Nature and Landscape Protection

This association, with the acronym SZOPK (Slovenský zväz ochrancov prírody a krajiny), was founded in 1969 as a voluntary, special-interest organization. It is an association of individuals, organizations, and institutions, of the Slovak Socialist Republic, concerned with Nature and landscape protection.

The main aims of the Slovak Union for Nature and Landscape Protection are:

- to participate effectively in the protection of natural resources and landscape and in the preservation of the quality of the environment,
- to introduce Nature and landscape and the regularities of their development to the widest possible masses of human population and their education towards cultivated relationship to Nature,
- to bring its members to understand Nature and landscape, to educate them specially and win them for creative activity in the care of Nature and landscape,
- to promote the natural beauty and natural resources of the Slovak Socialist Republic,
- to help to keep the legal precepts regulating Man's intervention in Nature and landscape, and
- to develop initiative for intensifying Nature protection and landscape creation.

The activity of the Slovak Union for Nature and Landscape Protection is directed by the central committee and district committees, the executive bodies being basic organizations and hobby-groups; special and consultational services are provided by sections and commissions. The development of the Union falls within the competence of the Ministry of Culture of the Slovak Socialist Republic, which directs the activity of the Union professionally and methodically.

In the year 1985 the Slovak Union for Nature and Landscape Protection had 14,000 individual members in 260 basic organizations and 438 collective members with over 313,000 employees, 11 special commissions, and 612 hob-

by-groups of young protectors of Nature with almost 11,000 children up to the age of 15 years.

For its members the Union provides:

- Publication of an illustrated journal, *Poznai a chrán* ('Learn and Protect'), of 204 printed pages in extent annually;
- Publication of methodological handbooks, materials from conferences and seminars, posters, leaflets, and propagational materials;
- Organization of interdepartmental sessions and press conferences;
- Organization of summer camps (TOP), excursions, courses of instruction, and training for members and functionaries;
- Realization of expositions, competitive-amusing and instructive-educational undertakings for the public in cooperation with cultural and educational bodies and social organizations—especially with the Socialist Union of Youth and mass-media;
- In cooperation with the state protection of Nature's protectional and regulational interventions, information and guarding service, inventorization and documentation of protected and other significant parts of Nature, cultural-historical and technical monuments and their background;
- Design, arrangement, and operation, of instructive paths and instructive localities; and
- Development of cooperation and exchange of information with partner organizations in Czechoslovakia, socialist, and other countries.

Many instructive-educational and propagational undertakings are also organized by the Union for the wider public.

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Declaration: Ecoforum For Peace

We, research workers who share ecological concern and who meet to participate in the International Conference on Protection of the Environment and the Defence of World Peace, held in Varna, Bulgaria, during 25–28 August 1986*:

—*Considering* that a nuclear war would bring devastation to the ecological systems of the planet;

—*Recognizing* that, even without war, the development, testing, production, and deployment, of nuclear weapons,

and of other weapons of mass destruction, is accelerating ecological disasters for Humankind;

—*Believing* that, because of their global dimensions, our ecological problems demand new dimensions of cooperation among all peoples and states, and that this free collaboration is not compatible with military preparations;

—*Realizing* that human intrusions into the environment through various aspects of modern technology pose grave threats if not undertaken from an ecological perspective; and

—*Aware* that true international security depends upon the achievement of harmony between Humankind and Nature;

* See the account by Carol E. Westing published on pages 373–4 of this issue. —Ed.