

inferior colliculus<sup>10,11</sup>, the major source of projections to MGv. It thus seems likely that the binaural dimension will turn out to be represented across isofrequency laminae throughout the higher-order auditory nuclei. The final proof of this organization requires, as an initial step, a physiological study of MGv in which electrode penetrations are oriented along the thalamic EE and EI bands so elegantly demonstrated by Middlebrooks. □

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## Stockholm meeting

# Environmental priorities: international and supranational

from Norman Myers

IN late November 1982, the Royal Swedish Academy of Sciences convened a week-long gathering of eminent scientists to look at environmental priorities for the 1980s. The aim of the meeting was to see how far we have advanced, or lost ground, in our environmental efforts since the UN Conference on the Human Environment held in Stockholm 10 years earlier. The gathering brought together 35 leading scientists, from all over the world, representing more than one dozen disciplines. Hence the assembly was well able to assess the gigantic experiments that we are conducting with the planetary ecosystem — experiments whose outcome we can envisage in only vague terms at best.

At least 40 environmental issues had been targeted as worth consideration. The conference finally selected the following items for priority treatment on the grounds that they require increased efforts if we are to get on top of them. (1) Research priorities (not ranked in order of importance): tropical deforestation; loss of biological diversity; cryptic spread of mutant genes; impact of semi-periodic droughts and floods; energy needs; acid depositions; buildup of atmospheric carbon dioxide; impact of toxic emissions on ecosystems and humans; loss of cropland due to salinization; and urbanization. (2) Management priorities (again, not ranked in order of importance): toxic emissions; tropical deforestation; desertification; control of human-waste pathogens and their aquatic vectors; population growth, with special emphasis on urbanization; energy needs; acid depositions; fuelwood crisis; loss of species; and marine problems. When an item appears on one list but not on the other, this is because it is already receiving sufficient emphasis under the heading where it is not mentioned; for example, desertification does not merit further research than it is already receiving, but it deserves greatly increased management.

A number of environmental issues that do not appear in either of the two lists have also been recommended by the conference for enhanced attention from governments, international agencies and other 'decision makers'. They include groundwater stocks, the ozone layer, mining pollution, over-fishing of the oceans, environmentally sound technology, radioactive wastes and nutrient pollution of water. Unless we do a better job on these items of 'secondary importance', the adverse repercussions for us will, the conference determined, be profound and expensive.

These diverse problems are all grounded in two central factors — excessive growth of human numbers in developing nations and excessive growth of consumer appetites in advanced nations. Were we to attempt to determine which of these two phenomena bears greater responsibility for environmental degradation around the world during the past 10 years, it could prove a toss-up. The amount of energy consumed by the entire Third World, with its over-use of fuelwood stocks and other degradation of natural resources, is less than the amount of energy wasted by the rich world. Many similar instances can be cited, indicating that the people who do most harm to the Earth's ecosystems are half a billion super-rich people and one and a half billion ultra-poor people.

Of the items designated for priority treatment, only about half were highlighted at the Stockholm conference in 1972. An obvious newcomer is the energy issue in general; so is fuelwood as an energy problem in particular. Acid rain was hardly heard of 10 years ago; nor was tropical deforestation, desertification, or mass extinction of species. Little thought was given to increasing carbon dioxide in the global atmosphere, or to declining ozone in the stratosphere. Yet all these issues appear set to become increasingly conspicuous.

Whether directly or indirectly, these issues have the capacity to affect many, if

not most, nations at one and the same time — thus placing a premium on concerted endeavour by groups of nations, if not by the whole of humankind. The feasibility of a coordinated campaign at the international level is evident in the success of the clean-up plan for the Mediterranean and other regional seas — in contrast, most of the other broad-scale problems listed have stimulated little in the way of international response. In the case of desertification, the UN Conference on Desertification calculated that a remedial campaign would cost \$400 million; the amount so far supplied by the international community is \$10,000.

Environmental problems that have hitherto been perceived as intrinsically national in scope are starting to be regarded as international problems. For example, pollution is no longer so readily confined to national jurisdictions, as exemplified in the case of acid rain. Furthermore, international problems are increasingly perceived as supranational, if not global, problems. For example, mass extinction of species, while occurring in individual nation-states, will impoverish all humankind through loss of species' genetic resources and the contributions they could make to modern agriculture, medicine, industry and bio-engineering. Desertification and deforestation may well lead to global climatic disruptions, while depletion of the ozone layer will harm the guilty and the innocent alike. □

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## 100 years ago

LIEUT. WISSMANN, the intrepid and successful German traveller, arrived at Cairo on January 1. His route from Loanda, by way of Nyangwe, on the Lualaba River, to Zanzibar, which measures about 3600 kilometres, led him for at least one-third of the distance through unexplored country. He has thus solved some of the enigmas of equatorial Africa. It is the southern half of the Congo basin through which Wissmann passed, and he found this to be most densely populated. This fact is remarkable, as it was entirely unexpected. Wissmann also passed through the land of a tribe of dwarf negroes. On the long and dangerous route from Lake Tanganyika to Zanzibar the traveller met with a most hospitable reception at the hands of the renowned brigand chief Mirambo, who supported him in every respect.

A member of the Paris "Ecole pratique d'acclimatation" has discovered a species of spider on the African coast, the firm and long web of which resembles yellow silk very closely, and is said to be almost as good as the product of real silkworms. The syndicate of the Lyons silk-merchants has closely investigated the matter, and the result is reported as highly favourable. There seems to be no difficulty in the way of acclimatizing the new silk-producer in France. From *Nature* 27, 348, 8 February 1883.