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BUSINESS CORRESPONDENCE: Area Code 202. Membership and Subscriptions: 467-4417.

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Science Advisers to the Government

There is a little-known but important committee that functions, reasonably effectively, as a scientific and technological advisory body to the secretary of state. The Advisory Committee on Oceans and International Environmental and Scientific Affairs was formed 2 years ago and, happily, has been continued by the present Administration. It has two interlocking missions: to deal with current priorities, and to provide early warning on longer term developments that will affect our international interests. The goal is to generate good policy based on good science.

To my knowledge, there is no other advisory body in the federal establishment that has the same broad distribution of scientists and laymen of recognized stature looking at the diversity of problems that affect our nation in its relations with the world. The committee's members are drawn from industry, universities, and the nonprofit sector. Thus they are equipped to deal in a general way with a great many topics. For example, they have considered scientific exchanges with the Soviet Union; industrial, health, agricultural, and military implications of genetic engineering; organizations for energy cooperation with developing countries; data collection systems for evaluating potential carbon dioxide problems and the "glass-house effect," and how we should look at strategic nonfuel, land-based mineral reserves in the light of seabed reserves and technological changes.

The last meeting, on 7 January, dealt in part with the problem of acid rain. An examination of the data confirmed the committee's opinion that sulfur dioxide is not the limiting factor in the formation of acids, including sulfuric acid, in acid rain. The limiting factor seems to be oxidizing agents, in particular NO_x. This dictates a different strategy from that recommended by the Canadian government. The committee also looked at the shift in interest in the exploitation of seabed minerals from small nodules to polysulfides of as many as 20 metals. The scientific conditions are thus very different from those that obtained when negotiations on the Law of the Sea treaty began 15 years ago. We need to seek a new solution, one that is generous, practicable, and based on the geological situation.

Because of its structure, the committee is also equipped to look in depth at a chosen issue by setting up an ad hoc subcommittee of specialists. The subcommittee on genetic engineering, which was formed last year, is a good example. The panel, convened by the AAAS for the Department of State, was small but included the leaders in research in genetic engineering. Perhaps because I was the member who had only a layman's understanding (or lack of it) of the field, I was made chairman. The panel brought in a number of recommendations, of which the first—more attention to the conservation of germplasm—led to a 3-day conference in Washington last November under the auspices of the Department of State and the Agency for International Development. It produced specific recommendations, which are being followed up.

The committee is functioning well for the State Department; it is attentive to a number of problems, but could attack more. Its success clearly demonstrates the need for some committee of equal breadth, independence, and prestige to advise the Administration on new directions in research and possible changes of emphasis in established ones. It is essential that there should be some overall control of the value, direction, and quality of research in general. It may be hopeless to expect one person to exert such leadership, but there should be one committee, and the work of the Advisory Committee on Oceans and International Environmental and Scientific Affairs is a demonstration of the fact that it can be done.—JEAN MAYER, President, Tufts University, Medford, Massachusetts 02155

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