Letters

Travel Restrictions Hurt Scientific Exchanges

The impending restrictions on foreign travel should be of serious concern to the scientific community. Not only will the proposed tax on foreign travel reduce contacts between American scientists and their colleagues abroad, but even more threatening are the restrictions which government agencies may impose upon foreign travel financed by federal funds.

Scientists should urge the government to consider the dangers of such restrictions. It is well known how important are personal contacts with foreign centers in planning future research; these contacts may save U.S. science large amounts of money and effort, which would otherwise be spent on duplication and repetition of work being done elsewhere. It is also a fact that correspondence by mail cannot replace personal contacts.

In particular, it would be most unfortunate if the participation of American scientists at foreign meetings and conferences were seriously restricted. Most of these meetings are regular events whose location rotates between the U.S. and abroad. Curtailing American participation abroad would result in smaller participation of foreign visitors at meetings in the U.S. Thus scientific contacts would be reduced without any gain in dollars.

Furthermore, there is an important prestige question involved. The U.S. still maintains a leading position in most scientific fields and this position should be clearly demonstrated at these conferences. This is done not only by presentation of high quality work carried out in the U.S.; it is also exhibited by the fact that the people who did the work are available for discussion, advice, and collaboration. There would be a subtle eroding effect on the prestige of U.S. science, if some active American scientists were prevented from attending important meetings.

Finally, whenever restrictions are imposed, the younger and less known scientists from smaller institutions are the first to be struck from the list. This group already suffers greatly from the present financial stringencies. They are more than ever in need of good contacts and direct interchange with the international community, in order to be able to choose the best and most productive means of using the restricted research possibilities which are left to them. Thus, there is a strong case in favor of exempting scientific foreign travel from any restrictions imposed by government agencies.

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I was going to send this to my senators and a couple of congressmen, but decided I'd rather have more readers than that.

It seems ironic that the restrictions on foreign trade and travel are often so prevalent in this country, whose main population is made up of immigrants. We seem to be strongly in favor of pumping money into foreign education programs, into foreign aid, into Fulbright and other programs, into the hopefully-to-be-funded program in international education, and yet we throw every conceivable roadblock in the way of the ordinary tourist who wants to take a trip abroad before he is so old that he isn't going to appreciate it. Who among us is dull enough to think that governments really make friends? Only people make friends, and it is the average guy and his family traveling abroad that can do the most good.

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Pest Control: Advise and Consent

I suspect few scientists would care to submit disagreements among themselves regarding matters of scientific judgments to courts of law for solution, the method being pursued by the Environmental Defense Fund ("Environmental pollution: Scientists go to court," 22 Dec., p. 1552). Since scientists are testifying for both sides, these court cases suggest that the law provides an appropriate judge of scientific competency.

When environmental problems such as these which clearly affect the public interest were first recognized in 1961, the federal government established the Federal Committee on Pest Control. This board, composed of government representatives who are experts in ecology, wildlife management, public health, chemistry of pesticides, entomology, and others, reviews pest control projects proposed by federal agencies. It examines each project with regard to the safety of man, animals, and the total environment. During the deliberations, the agency making the proposal is encouraged to have a representative present to explain and defend the plan. Usually he has the authority to alter the agency's plans to meet any objections raised by the FCPC. Thus, the necessary modifications in the plans are made before the FCPC makes its formal recommendations. While not binding upon a federal agency, these are generally followed, and valued for their objectivity.

If a court appoints a tribunal, presumably both parties to the litigation have an opportunity to nominate members to the tribunal. In the case of the Federal Committee on Pest Control, this is achieved by permitting each of the federal departments with primary concern to appoint an equal number of the members.

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Less Rain in Latin America

Portig (Letters, 26 Jan.) calls attention to possible regional decreases in rainfall that could result from the felling of the Amazon basin rain forest. Rainfall data from the state of Antioquia, Colombia, could be pertinent to this point. Table 1 shows the total rainfall for the years 1942 to 1967 at two stations. The 26-year period is divided into three equal parts, but the years 1945, 1946, 1961, and 1963 are excluded from both stations because data at one (El Bagre) for those years is incomplete. None of the six averages given is biased either by an exceptionally wet or an exceptionally dry year. Medellín is a mountain city (elevation 1500 meters), in the center of an area

Table 1. Average annual rainfall in inches. The data were provided by the Empresas Públicas de Medellín and Pato Consolidated Gold Dredging, Ltd.

Average rainfall (inches)			Total decrease (%)
1942–51	1952–57	1958–67	
Medellín			
59.1	56.5	46.7	21
El Bagre			
178.2	157.0	135.9	24

at least 2000 square kilometers in which man has little altered the vegetation during the past 26 years. El Bagre, on the other hand, is in the lowlands (elevation 76 meters), about 200 kilometers northeast of Medellín, and in an area in which, during the same period, vast tracts of rain forest have been felled.

Although rainfall at both stations has decreased dramatically, the ultimate cause is not known. It may have been produced by widespread felling of rain forests in Colombia and neighboring countries, although this remains unproven. On the other hand, it may be cyclical and unrelated to the rain forest. Whatever the cause, the effect in Antioquia, at least, seems regional. Should the decrease be widespread throughout the continent, the consequences could seriously retard the development of the tropical Latin American countries, as implied by Portig. Studies should be made in and around the Amazon basin (i) to see if the rainfall decrease observed in Antioquia is widespread, and (ii) to determine precisely what effect on rainfall, both local and regional, the destruction of the rain forest produces so that necessary measures can be taken by the respective countries to preserve these forests.

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Gold Drain and Brain Drain

As an international National Institutes of Health postdoctoral fellow from Peru (Cayetano Heredia Peruvian University), I was much interested in Abelson's editorial, "International medical research and gold drain" (26 Jan., p. 381). I am grateful to my American sponsor institutions (NIH and the Commonwealth Fund), to my present and former advisers, and to the American taxpayer for having provided me with an opportunity to receive training in my specialty for the past 3 years. The congressional policy of meat-axing the NIH international programs, although perhaps a necessity in view of other foreign commitments, will nevertheless greatly affect scientific research abroad. In previous years, all former NIH international fellows had the opportunity to obtain, on a competitive basis, a modest grant of $7500 for 3 years. This economic support was important to the initial development and continuation of research programs in our home countries. Now such economic support is, under current fiscal policy, no longer available. The net effect will be that individuals living in less affluent countries who possess research interests but lack domestic funds to support their programs will migrate to other countries (for example, the United States) where research funds are more readily available. Hence, decreasing the gold drain (slightly, but not substantially) will also increase the brain drain.

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Results of Research Survey

The following are the results of my survey on a study of justifications offered by scientists for continued federal support of basic research (Letters, 19 Jan.). Of the 65 respondents, 40 were academics, 14 were in government, and the remainder were in research institutes and industry. Of these, 25 were life scientists; 11 were chemists; and the rest were divided among physicists, psychologists, mathematicians, and geologists. Since many voted for more than one of the five categories listed, the total number of votes is greater than the number of respondents. The justification most often cited was category (ii), the utility of science as the basis of technological development, with (i), the intellectual and cultural contributions of science, a close second: 36 votes to 33. The justification of research's contribution to graduate education (iii) drew 15 votes, while research costs (iv) and political contributions (v) each drew six. A few respondents gave different answers depending on whether they were thinking intellectually or politically. Thus ten people who placed (ii) first nevertheless said that (i) would be their personally preferred justification.

Despite the small sampling, one conclusion is suggested—that scientists live with a bifurcated tension situation; that is, they want science to be supported for its cultural value, yet they recognize that public patronage is given largely on a utilitarian basis. Therefore, we may expect always to have some degree of disagreement between scientists' views and the views of legislators and governmental executives of what science support policy ought to be. Mutual understanding must be continually sought, even if never totally achieved.

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Summer Systematics Institute

Under the title "Systematics workshop" (9 Feb., p. 659), Schopf and Ames have described the summer institute held last summer at the Smithsonian Institution. That institute was the fulfillment of efforts by many people in the biological community, including the National Science Foundation's division of biological and medical sciences, the Air Force Office of Scientific Research, the Smithsonian Office of Systematics, the Society for Systematic Zoology, and the American Society of Zoologists.

The American Society of Plant Taxonomists, encouraged by the success of the 1967 institute which emphasized zoological systematics, plans to convene a summer institute for botanical systematists 24 June to 12 July 1968 at the Smithsonian Institution. A panel of distinguished botanists will lead the 3 weeks of discussion, ranging over the entire field of systematics from its philosophy to its techniques to its teaching. Each morning an outstanding botanist will present current concepts in his area. Afternoons will be free so that the institute participants can use the collections of the U.S. National Herbarium in their own basic work in plant systematics.

The Smithsonian Office of Systematics will distribute applications and a selection committee of the ASPT will choose the 25 participants, using the same general criteria outlined in the letter of Schopf and Ames.

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