Letters

Foreign Research and Dollar Drain

In the 14 January issue Daniel S. Greenberg objected to an examination of U.S. official expenditures for foreign research in terms of their contributions to our payments deficit. Greenberg correctly pointed out that of the $70 million per year which has been spent abroad for research, some $30 million is the portion at issue. He argued that this $30 million sum, though large, should be judged "in terms of scientific results and foreign goodwill" instead of "dollar-drain considerations."

I wish I could agree. But unfortunately, our ability to obtain foreign goodwill has had to be curtailed for balance of payments reasons in other important government programs. For example, the tying of foreign aid to purchases in the United States cuts down the actual assistance we give to developing countries by depriving them of their previous freedom to use aid money in purchasing from the cheapest world resources. Again, through tightened restrictions on duty-free purchases by Americans traveling abroad, we are netting some $50 million per year in balance of payments terms, but at the cost of damage to the economies of many developing countries.

Both actions unfortunately diminish the effectiveness of our foreign policy, and neither has earned us goodwill. Yet they are necessary. Surely it is no less necessary to limit foreign research outlays to those which are most urgent and which cannot be performed in this country. As Greenberg points out, this view is shared by the Administration.

My question is: Are present guidelines limiting research outlays abroad adequate in view of our continued inability to balance our international accounts? Does our support of projects in countries like France serve to diminish the incentive for France to support her own research?

If, as a result, these countries, some of which have been concerned about a "brain drain," succeed in establishing stronger centers of excellent science in Europe and elsewhere, the whole world would benefit. The United States might even earn their gratitude—in the process of following President Johnson's directive to eliminate, in 1966, our balance of payments deficit.

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Mathematics Curriculum: New Study

The School Mathematics Study Group (SMSG) is a national organization devoted to the improvement of mathematics programs in the schools. It has received substantial financial support from the National Science Foundation. Since its beginning in 1958, SMSG has prepared 20 textbooks covering the sequence from grade 1 to grade 12. Already over 5 million child-years have been devoted to study from these textbooks.

The SMSG Advisory Board believes that these textbooks have served, and will continue to serve for some time, as a useful example of a relatively up-to-date curriculum, but that longer-range planning and experimentation should be started before present materials become frozen into a newly orthodox pattern that will require another upheaval a few years hence. The board has, therefore, decided to convene a group to design a new sequential curriculum for grades 7 to 12 and to plan appropriate experimental materials. Major emphasis is to be given to the design of courses which exploit recent progress and to a sequential curriculum which will be responsive to the rapidly developing needs for mathematics in our society. Plans are being made for panels to meet this spring and summer to begin to carry out this decision. We would like their deliberations to take account of the concerns and the suggestions of anyone who is interested in what mathematics is taught in our schools. Some of the questions which the panels will consider are:

1) Are there trends evident in the way mathematics is being used today in our society that should be taken account of in this long-range planning?

2) Are there things now emphasized in school mathematics that are of little value in the further study of mathematics or in the applications of mathematics?

3) Do the general directions of scientific and mathematical research indicate new topics that should be taken account of in school mathematics?

4) Most curriculum development in school mathematics during the last decade paid little more attention to the applications of mathematics than had been done in the past. What are some specific ways of improving this situation?

5) What mathematics should we provide in school for those that are below average in academic ability? Should we think in terms of a hard core of basic skills necessary to get by in the world, or of some more general set of mathematical concepts, skills, and attitudes that should be a part of the general education of all future citizens?

6) Some acquaintance with mathematics is becoming useful, if not essential, to an ever-increasing number of people. Does this indicate a change in the amount of mathematics that should be recommended for all students?

7) It is widely urged that school mathematics take account of the "computer revolution." Should this be done, and if so, in what specific ways?

Comments on these and related issues are earnestly solicited. Communications should be addressed to me.

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Evolution in Arizona

Recent letters concerning the anti-evolution statute in Tennessee (22 Oct., p. 435; 3 Dec., p. 1244) serve as a reminder of the obstacles still lying in the way of free inquiry in certain fields. I think readers should know also of a recent attempt to make it illegal to teach the "doctrine of evolution" in Arizona schools. L. K. Lisonbee has given an excellent summary of events ["Thwarting the anti-evolu-