

length of time. Thus a graduate department may be justified in feeling that the time, effort, and money which it invests in educating a male student is more likely to produce dividends for the profession as well as for society in general than is the same amount of time, effort, and money invested in a female.

If women are truly concerned with breaking down prejudices which exist toward admitting them to graduate study, they must recognize that such prejudices have some basis in fact. Those women who are admitted to graduate programs should therefore feel an obligation to complete the program and to use the resulting degree professionally, so as to encourage those persons in graduate departments who believe that women should be given an equal chance.

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## **Balance of Payments and Government Policies**

Abelson's editorial "Science, technology, and the gold drain" (26 Feb., p. 989) calls attention to a problem that can only become more acute with time as overseas manufacturers continue to regain ground lost because of World War II.

In our company's area of production—analytical instrumentation—the U.S. had an overwhelming technical lead in nearly all types after the war. There were also quite substantial import duties on foreign apparatus. But as the technical gap narrowed, the U.S. government decreased the duty; hence some foreign concerns began to be successful in selling instruments of one type or another in the U.S. market. The U.S. sales increased their volume considerably, making still lower prices possible, in the classical pattern. This attracted some U.S. companies with strong instrument sales organizations to enter into agreements whereby they would sell the foreign equipment in this country instead of attempting to manufacture here and compete. I think it is fair to say that, with a very few exceptions, such apparatus competes in the U.S. with U.S.-made equipment solely on the basis of lower price—which is, of course, a reflection of cost differences, largely in hourly labor rates. Major instruments

like mass spectrometers require a very large direct labor input, measured in the thousands of hours, and a large number of "overhead" work hours as well. The U.S. manufacturer pays perhaps \$2 to \$10 per hour more for such labor than his foreign counterpart. This cost disadvantage is only somewhat offset by the present import duty (say \$5000 on a \$50,000 spectrometer) and shipping costs (about \$500 from Europe and \$1000 from Japan).

Pertinent to the editorial, however, is the fact that the federal government is itself the chief reason for the increased sale of foreign apparatus in this country. This has come about because:

1) The government and its contractors must ordinarily accept the lowest bidder meeting specifications, after application of any differential under the "Buy American" Act (presently only 6 percent); hence, if specs are loosely drawn, a person desiring to purchase a U.S. instrument may find himself with a foreign one. Further, the more complex the apparatus, the harder it is to draw really meaningful detailed specifications; so much depends on manufacturers' know-how.

2) The government does not require that university contractors or grantees under NSF, NIH, and other agencies follow the differential guideline of the "Buy American" Act at all.

3) Individual congressmen sometimes introduce, upon request, private bills exempting from import duty imports to universities in their areas, when U.S. equivalents are readily available.

4) Fund-granting agencies, chronically long on projects worthy of support and short on funds, try to stretch funds by granting fewer dollars per project. They seem to prefer to cut back on equipment, not salaries. Thus, from time to time, one of our prospects will report to us that his project has been funded—but with the requested allowance for a mass spectrometer cut to below the cost of a U.S.-made instrument but, surprisingly, exactly right to enable him to "buy Japanese."

5) When the government procurement rules apply, the government requires the U.S. manufacturer to certify that he complies with the minimum wage and working-condition laws, the 40-hour-week and 8-hour-day overtime laws, the fair employment practices law, and so on, seemingly ad infinitum,

while of course being in no position to make such demands on the foreign concern.

On the other hand, when U.S. manufacturers go overseas to sell, they are finding more and more discriminatory rules, such as the 15 percent surtax that the British government recently enacted and the 35 percent "value-added" tax in France—measures aimed at keeping the U.S. from selling there unless one sets up one of those foreign subsidiaries described in the editorial.

It is clear from this that there are ways, other than encouraging would-be tourists to "see America first," to help our balance of payments. The government can hardly expect individuals to take seriously a code that it itself violates daily in its own purchases or through its agents and beneficiaries. Public funds should be spent to achieve public purposes. Two current national purposes of great importance are the achievement of a better balance of payments and the maintenance of full employment. The Administration itself could assist materially in the achievement of these goals by filling its own and its contractors' requirements from domestic sources except in exceptional circumstances.

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## **Air-Pollution Control**

I have been engineering and selling equipment for the control of air pollution for the last 20 years and would like to comment on the editorial on that subject (26 Mar., p. 1527).

Increasing "the study of all aspects of air pollution" is not the primary requisite for pollution control. Additional research and development would undoubtedly lead to increased knowledge, but the knowledge of the causes and effects of air pollution already greatly exceeds the efforts at control. What we greatly need is uniformity in the many codes and a uniform enforcement of these codes. A federal code with adequate trained personnel to enforce it would do more to reduce air pollution than any additional research grants. . . .

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