Letters

Biologics Control

The reports by Nicholas Wade (News and Comment, 25 Feb., p. 861; 3 Mar., p. 966; 10 Mar., p. 1089, 17 Mar., p. 1225) on the Division of Biologics Standards (DBS) do no great credit either to *Science* or to the reportorial craft. Having worked on the development, production, and evaluation of biologic products, both in the United States and elsewhere, for over 30 years, I can assure Wade that, had he dug a little deeper, he could have developed a really useful and informative story about biologics control and its problems. The control of biologic products—pioneered in the United States some 70 years ago and still carried out there better than anywhere else—can perhaps be best compared with the control of safety in flight. Both have many obscure and complicated scientific problems still to be resolved. Both require first-class scientific expertise and mature administrative judgment, along with the toughness to withstand pressures from politicians, commercial interests, and the sensational press. It is at best an extremely difficult assignment, yet the record of performance of the DBS has been remarkably close to perfect. The Cutter "episode" of 1955 came about despite the efforts of the responsible scientists in the Biologics Control Laboratory to prevent such a disaster. Indeed the fact that Morris and Turner chose to resurrect this episode, and came up with no other significant examples of failure to maintain adequate control, indicates how well the control job has been performed over the years.

Of course there are weaknesses—in funding, in legal authority, in staffing, and so forth—as in any such agency. But the major weakness is the lack of scientific information. For instance, the relative inadequacy of all laboratory tests so far devised for evaluating the potency of influenza vaccine is well known, not just to the DBS but around the world. However, the best available procedure—the CCA (chicken cell agglutination) test—has at last been brought up to a high level of precision through the efforts of the responsible members of the DBS staff. Moreover, it should be emphasized that influenza vaccine has been tested for efficacy in man probably more extensively and more often than any other vaccine, and that the great majority of properly controlled field trials have shown influenza vaccine to be moderately to highly effective.

Control agencies are unglamorous, and this points up a second major weakness of the DBS—a chronic insufficiency of funds. Control agencies are "news" only when something appears to go wrong; as long as everything appears to go right they will attract little attention or support from administrators, legislators, or the press. Consequently, unless something appears to be wrong with them they can be maintained in a state of financial semistarvation indefinitely.

Finally, the DBS also needs adequate legal authority to do its job. Twice in the last 30 years the Congress has given the DBS authority to control the potency, but not the efficacy, of biologic products. Therefore it is comforting, even at this late date, to learn that at last an administrative decision has been reached (News and Comment, 10 Mar., p. 1089) that the DBS apparently *does* have such authority.

What emerges from a careful and thorough study of the DBS story is the realization that no government regulatory agency can do its best unless it gets the full fiscal, administrative, and legal support that it needs in order to do its job. In the present structure of the government, any effort on behalf of the DBS to get such support may be scuttled at a dozen points along the line. All of us who have long been concerned with the maintenance of the high standards of biologics control, for which the United States is justifiably noted, have been hoping all along that the importance of the agency responsible for this activity would eventually be recognized. One-sided "recognition" such as *Science* has provided can do great harm, and it does the country no service to damage an agency as useful and effective as the DBS.

GEOFFREY EDSALL
Department of Microbiology, London School of Hygiene and Tropical Medicine, Keppel Street, London WCIE 7HT, England

Women and the Professions

In "Women in academia" (Editorial, 14 Jan., p. 127), Philip Abelson contrasts the professional involvement of women in America and in Europe and underlines the reduced opportunities of women in higher education.

Any comparison of work situations on the two continents must include considerations of prestige, professional standards, pay levels, degree of autonomy, and responsibility. In Europe, historical and economic forces have perhaps played a more significant role than concern with sexual equality. The great male migrations to the United States during the 19th and early 20th centuries, the decimations of war, political and racial oppression, and the talent drain, as gifted men sought improved opportunities, all drastically reduced the male population and propelled women into activities to fill their own lives and the needs of the economy. Except when they temporarily replaced male workers during the wars, American women were able to stay at home. However, since 1950, women in the labor force have increased 70 percent, 50 percent in the last decade. The small number of working women is due, not only to discrimination, but also to feminine choice.

In 1970–1971, women constituted only 10.94 percent of medical school applicants. Of these, 11.27 percent were accepted, and the proportion of women increased to 9.6 percent of the student body from the 9.0 percent of a year earlier (*1*). The proportion of women accepted exceeds the proportion of men accepted (*2*). The dropout rate seems to be twice the male rate (*3*).

In Russia, where gifted men are assigned to the physical sciences and other fields, salary and prestige are low in the medical profession; 75 percent of physicians are women. In England, where women constitute 24 percent of physicians, because of the relatively low income, a large proportion of qualified women do not practice (*4*).

In the United States, women appar-