Letters

Timber Management

Constance Holden (News and Comment, 2 Apr., p. 36) presents one of the better balanced brief accounts of the issues involved in recent congressional hearings on timber management in the national forests. But she is perhaps more kind to S.2926 (the Randolph-Brown bill) than close analysis warrants, for the bill does little to obviate the "anachronism which no longer serves the public interest" inherent in the Organic Act of 1897. The detailed silvicultural prescriptions written into S.2926 are inapplicable over the wide diversity of forest types found in the national forests of the East. Section 7(a) of the bill provides "that uneven-aged forest management primarily implemented by selection cutting shall be used in the eastern mixed hardwood forests." The implication of this section is that even-aged management poses hazards to the forests but that uneven-aged management does not. The deteriorated condition of most of the eastern mixed hardwood forests is a result of widespread selection of the largest and best trees, which has left inferior individual trees and less valuable species to reproduce. Areas of mixed hardwood that were clear-cut in the Bent Creek Experimental Forest in North Carolina in the 1930's (as demonstrations of what were then considered undesirable practices) have regenerated into superior mixed hardwood stands, whereas selectively cut stands in the same forest have failed to regenerate adequately in quantity or in quality.

Forest land use (*1*) is an issue vital to all Americans and deserves careful study rather than sloganeering. Holden has made an important contribution by calling attention to this point.

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Natural Rubber Production

To paraphrase Arthur M. Bueche (Editorial, 12 Mar., p. 1007), it is indeed "ironic that in the bicentennial year of our Declaration of *Independence*," we are still *dependent* on foreign nations for our natural rubber supply. Despite Bueche's statement to the contrary, the United States has not yet achieved "virtually complete rubber independence." We still import 800,000 tons of natural rubber annually.

Bueche does not mention the guayule plant *Parthenium argentatum*, a rather inconspicuous small shrub that grows in the Chihuahuan Desert in Texas and Mexico. This plant has been a limited source of natural rubber for nearly 100 years and has been exploited and improved by the Mexicans to the point where it can supply natural rubber of a quality equal to the best hevea rubber from the Far East.

During World War II, many U.S. scientists worked on a program to increase our natural rubber supply by growing the guayule plant. Named the Emergency Rubber Project, it started with a small guayule nursery, 23,000 pounds of seed, and about 700 acres of plantation in the vicinity of Salinas, California. By 1944, it had expanded to 2,000 acres of nurseries, 32,000 acres of plantation, and two rubber extraction mills and was sufficiently successful that Congress authorized the plantation's expansion to 500,000 acres. The entire program was a fine example of a research-and-action team cooperating under the aegis of the Department of Agriculture and the Forest Service, but it was canceled at the end of the war because of the development of synthetic rubber.

As a last word, many chemists who originally favored production of synthetic rather than natural rubber are now backing a guayule R & D program to fill the gap they were not, after all, able to close. Looking ahead, those of us who were involved in the original program and whose interest in the potential of this plant has been renewed by the energy crisis, believe that a joint university-government-industry program can still be an effective method of meeting our national needs. Our leaders should be aware of the possibilities of natural rubber production rather than relying on energy-consuming factories.

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McGinnies makes an excellent point. Changes in the international environment and new national priorities challenge us periodically to review past decisions. In the case of technological decisions, taking a new look at old ideas is especially important because often some new technology—frequently from an unrelated and unexpected source—may substantially change the bases on which the original decisions were made. Since great strides have been made recently in plant science, it seems to me it would be quite appropriate to conduct a cooperative university-government-industry review of the technical and economic feasibility of developing the nation's guayule resources.

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Physician Migration

In the article "Physician migration reexamined" (31 Oct. 1975, p. 439), Rosemary Stevens *et al.* present new data regarding the influx of foreign medical graduates (FMG's) to the United States, which indicate that the estimate of new arrivals has been grossly inflated. We are indebted to the authors for disclosing the misleading statistics published by the Immigration and Naturalization Service and for more precisely delineating the number of FMG's we import annually. I take issue, however, with some of the statements the authors make along the way and disagree with the implication of their conclusions. The reasons for wanting to plug the "brain drain" of physicians to the United States go far beyond the bald figures, and I am not persuaded that "measures to curb the entry of FMG's may be unnecessary."

Only one-third of the 43,000 Americans currently applying for medical school are accepted (*1*), and Medical College Admission Tests have repeatedly shown that about one-half of those re-

jected are denied admission solely because of an inadequate number of freshman slots in medical schools. Thus, thousands of college graduates cannot pursue the career of their choice in a profession that is in short supply, and other thousands, who can afford it, seek a medical education abroad. These facts are inimical to our democratic institutions.

The question also arises of why some of the poorest countries in the world should shore up the weak medical manpower foundations of the richest. Of the 7419 FMG's newly licensed to practice in 1973, at least 75 percent, or some 5600, came from the medically underdeveloped countries of Asia, Africa, and Latin America (*2*). These physicians represent the output of 56 of our average-sized medical schools. The capital savings to the United States in bricks, mortar, and chrome alone are more than $6 billion. It easily costs $100,000 to raise and educate an American from childhood through medical school, so the poor countries subsidize us by an additional $560 million yearly. There seems little doubt about who is giving whom the most medical foreign aid.

Nor should we assume that the donor nations are complacent about the physician "brain drain." India has reacted by prohibiting her medical school graduates from taking the Educational Council for Foreign Medical Graduates examination, without which no FMG can apply for U.S. postgraduate training. Iran cries that "One Country's Transfusion Is Another Country's Hemorrhage" (*3*), as one-quarter of her medical school output ends up in the United States (Iran has 26 physicians per 100,000 people; the United States, 156 per 100,000). And Malaysia has appealed to the World Health Assembly to "Stop That Brain Drain" from underdeveloped to developed countries (*4*).

Philosophical issues aside, I disagree with the authors' conclusion that "assumptions relating to FMG's should be regarded as not proven until incontrovertible evidence is available." The evidence is not only available but overwhelming. What is really relevant is the number of FMG's who obtain a license to practice in the United States, for relatively few of them ever return permanently to their native country (*2*). Precise data are available concerning the number of new physician licentiates who are graduates of U.S. (including Canadian) medical schools and those who are FMG's (*2*). The picture is a bit gloomier than the one painted by the authors. The following table indicates the total number of physicians newly licensed to practice in the United States, in three selective years, and the percentages of FMG's (*2*).

New licentiates			
Year	Total	FMG's	
		No.	Percent
1965	9,147	1,528	16.7
1969	9,978	2,307	23.1
1973	16,689	7,419	44.4

Comparing the number of FMG licentiates in 1965 with those in 1973, the increase is 385 percent! If we accept the American Medical Association's estimate of an annual loss of 4,000 physicians due to death or retirement, the net increase of the physician population in 1973 was 12,689—58 percent of whom were FMG's and 42 percent U.S. graduates.

The prospect for the future is more of the same, as both the absolute and relative number of FMG's in training here increases yearly (*5*).

Interns and residents training in the United States			
Year	Total	FMG's	
		No.	Percent
1965	41,357	11,474	27.7
1973	56,244	18,395	32.7

The vast majority of these trainees will become licensed and practice in the United States, as they have in the past. The statistics have become so distorted that there are now more Filipino than black physicians in this country (*6*), despite the fact that 22,580,000 blacks and 343,000 Filipinos were reported in the 1970 U.S. census.

No one would argue with the authors' plea for "the production of accurate data on physician manpower." But there is ample data available on medical education and licensure in the United States to warrant a strong stand for further medical school expansion and a concurrent restriction of FMG immigration.

ALEX GERBER

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