Letters

Can Measles Be Eradicated?

My concern with the present public policy surrounding the new virus vaccines compels me to discuss the following dangerous practices as they apply to measles. Public authorities are mandating measles vaccine. Yet it is accepted, I believe, that (i) passenger viruses are hard to detect in the laboratory; (ii) the final test of vaccine safety is in the field; and (iii) the field trials should contain controls. In view of the possible role of viruses in human cancer, chronic central nervous system disease, and autoimmune disease, can one be certain that passenger viruses would show their effect within 1 month after inoculation? Yet, to the best of my knowledge, that is the approximate duration of controlled field trials of measles vaccine in the United States.

The purpose of advocating vaccination against measles now seems to be to "eradicate" the disease. If eradication implies a vaccination campaign of limited duration which, once accomplished, will never have to be repeated, the concept is illusory unless thorough vaccination is carried out simultaneously throughout the world. If vaccination does not protect forever, then vaccinated persons who escape natural infection will become susceptible. Unless the persons are revaccinated, this is a dangerous state of affairs if the virus is not completely eradicated.

For those vaccines which warrant general use, the ideal arrangement, I believe, would be (i) field trials of more adequate size and duration; followed by (ii) gradual introduction of the vaccine into the general population as confidence in its use grows with experience; at the same time the vaccinated should be observed so that the effectiveness of the vaccine can be assessed.

There are two reasons for my concern. I had thought that those responsible would surely be agreed that controlled field trials of short duration are inadequate unless the disease in question is so malignant and common that vaccine safety is secondary. Yet one reads about "eradicating" mumps with a new vaccine whose controlled field trials lasted only 2 weeks (*1*). The second reason is that physicians are subjected to unwarranted pressure to conform to hurried mass use of products they question. This pressure is the result of the "public education" fostered by official health agencies, which presents a one-sided view of the bad effects of measles, the feasibility of genuine eradication, and the safety of the vaccine. Pressure also comes from statements like that of a prominent Public Health Service official who has said that health officers who allow measles epidemics to go unchecked, that is, do not use vaccine en masse, are delinquent in their duties. If a physician has serious doubts as to the safety or necessity of a procedure, his responsibility to his patients cannot be abrogated by a public authority in so controversial a matter. Under these conditions he is unjustifiably placed in a dilemma.

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Reference

1. *New Engl. J. Med.* **276**, 295 (1967).

Proliferation of CB Warfare

Rothschild, in advocating use by the United States of chemical and biological weapons (Letters, 14 Apr.) exaggerates the favorable characteristics of such weapons while ignoring their great potential dangers. CB weapons are potentially comparable to nuclear weapons for the killing of large populations. Once developed, these devastating weapons could be exceedingly cheap, easy to produce, and quick to proliferate. If they were considered acceptable for use in war, there would be a powerful temptation to use them in surprise or covert attacks, since preparations and training by the defense would greatly diminish the effectiveness of CB attack. These attributes—cheapness, a great potential for killing entire populations, and a premium on unexpected or covert use—are not likely to increase the security of this country or of any other.

We agree with Rothschild that the fundamental problem is that of preventing war itself. He holds that therefore it is unsound to attempt to prevent the use of any particular weapon, while allowing the use of others. We disagree. For example, it is clearly desirable to prevent the use of nuclear weapons even while the problem of preventing war in general remains unsolved. The use of even the smallest nuclear artillery shell in combat would break down barriers to the use of more powerful nuclear weapons and no one could foretell where the escalation might end. The use of chemical or biological weapons, even relatively mild ones, involves similar but less well-recognized dangers.

Rothschild justifies the program of crop destruction in Vietnam on the ground that depriving the enemy of food is a standard technique of warfare. We grant that it has been widely and repeatedly used. We would emphasize, however, that starvation is a weapon that is directed *primarily* against the civilian population, and especially against the children. The blockade of central Europe during the first World War led to the starvation of millions of children, who either died or led permanently warped lives thereafter. (See Jean Mayer's letter, "Crop destruction in Vietnam," 15 Apr. 1966.) Crop destruction in Vietnam strikes at the whole civilian population in the affected areas. On a small scale it is ineffective; on a sufficiently large scale it is disastrous for the whole community, particularly in a country that depends on rice to live. If our aim is to win the support of the people, and to help rebuild a peaceful and prosperous Vietnam after the war, we shall do well to refrain from crop destruction.

We consider that the possibility of making war more humane through the use of "non-lethal" CB agents is greatly exaggerated by proponents of CB warfare. The effect of a weapon depends upon how it is employed. Under the desperate pressures of a war being fought with artillery, bombs, napalm, and other lethal weapons, it is only reasonable to expect that "non-lethal" weapons, once introduced, will come to be used to achieve maximum military effectiveness, regardless of whether such use is lethal. This has happened in Vietnam, where we spread riot gas over large areas to make persons emerge from protective cover to face saturation

attack by fragmentation bombs. If such use of so-called "non-lethal" CB weapons becomes widely practiced and generally accepted, the way is paved for a chemical and biological arms race and progressive escalation in this or future wars to the use of the entire spectrum of CB weapons.

In this connection we would like to quote the strategic analyst T. C. Schelling [*Arms and Influence* (Yale Univ. Press, New Haven, 1966), p. 131] on possible agreements for preventing the use of gas in warfare:

> "Some gas" raises complicated questions of how much, where, under what circumstances; "no gas" is simple and unambiguous. Gas only on military personnel; gas used only by defending forces; gas only when carried by projectile; no gas without warning—a variety of limits is conceivable . . . But there is a simplicity to "no gas" that makes it almost uniquely a focus for agreement when each side can only conjecture at what alternative rules the other side would propose and when failure at coordination on the first try may spoil the chances for acquiescence in any limits at all.

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In Defense of Rachel Carson

Philip H. Marvin's complaint (Letters, 7 Apr.) that the "plague" of Rachel Carson's book continues to "infest" the minds of scientists demands comment. *The Silent Spring* has not only "infested" scientists, but also caused naturalists who look further than the results of a single crop to become acutely aware of the danger of pesticides. It is true that Carson's book contains overstatements, but it is also true that many forms of wildlife, particularly those at the end of a feeding hierarchy, such as hawks, terns, spoonbills, and many others, are unnecessarily decimated by the indiscriminate use of pesticides. In Holland several of these forms of wildlife are now at at the brink of extermination. The "plague" of pesticides forms a real danger, and the struggle to preserve nature, based both on Carson's warnings and on the newer investigations of the near extinction of wildlife, must continue.

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Patriotic Emigrants

Although the brain drain is a complex sociological problem, it is unfair to blame it on those who do not partake of it (Byrne, Letters, 17 Mar.). Having spent some years researching in one of the bigger institutes in the U.S. or Britain, the returned scientist can hardly expect the fatted calf from his stay-at-home colleagues, who have continued to work in much less glamorous surroundings, with second-rate equipment and poor funding, with lower salaries and larger teaching duties, but still have managed to keep the home institution going during their colleague's absence. That valuable research experience abroad should be recognized by the home institution is without question; it is equally true that a university or college owes its lifeblood to those who, perhaps shortsightedly, stay with it through difficult times. The fact that so many returned emigrants eventually leave their native shores again is as much their own failure to come to terms with their home environment as it is of the home institution to appreciate their value. If such institutions, "which have been unchanged since St. Patrick," are to be changed, then it will come about through the efforts of those who return—and stay. Whether the motive is patriotism or the desire to help an underprivileged nation to better itself—surely either is big enough to withstand some petty, but inevitable, professional jealousy.

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Byrne (Letters, 17 Mar.) would class me as a "returned Yank" and, indeed, for some time after I returned 12 years ago I shared some of his feelings toward Irish institutions. However, the change in attitude toward returning scientists which he calls for has been underway for some time.

In this University College, a majority of the senior teaching staff are "returned Yanks" or "Sassenachs," a development that is obviously being encouraged. The government-sponsored Commission on Higher Education recently recommended drastic changes in university administration, including replacing our archaic appointment system with one in which applicants for senior staff positions will