Letters

Disease Control

The general approach that Cohen (18 June, p. 1212) advocates for cancer research is an improvement over the old idea that if we simply let loose enough investigators with enough money, then all of our health problems will be solved. That idea was too much akin to the notion of the economic invisible hand that would in the long run effect the best allocation of resources. As Keynes put it, "in the long run we are all dead" (*1*). But Cohen does not go far enough. As he says, we need "well defined goals, programs and priorities," but we need them not merely for cancer research. We need them for the overall problem of disease control.

One approach would be to emphasize those diseases that (i) account for the greatest premature mortality, (ii) have the greatest morbidity in terms of seriousness and number of patients, and (iii) have the best prospects for alleviation. In the United States the four most important causes of premature death (at age 75 or less) are heart disease, cancer, accident, and stroke. In terms of duration, probably the most important single cause of morbidity is mental illness, specifically schizophrenia and depressive psychosis. Ranking diseases in terms of prospects for alleviation is much more difficult (although the drug treatment of psychosis has been relatively more successful than the chemotherapy of cancer—neither of them are very good). In any case, fundamental biological research, while of unquestioned importance for the understanding of disease, is but one aspect of the problem of disease control. Historically, there can be little doubt that the most important single factor in the control of fatal disease has been prevention. Prevention in turn has depended much more on epidemiology than on cell biology. The most important single element in the control of most fatal diseases would still seem to be prevention; we should therefore allocate a relatively greater effort to prophylaxis than to basic biological research. It doesn't make sense to shortchange screening programs that might eradicate cervical cancer while greatly expanding research into the molecular biology of cancer. There is no assurance that understanding cancer will mean curing cancer. Nor is it rational to spend $7 million in a problematical effort to treat sickle cell anemia, while denying $5 million to control lead poisoning, a disease that can be virtually eliminated.

CHARLES P. MILES
Department of Pathology,
College of Medicine,
University of Utah,
Salt Lake City 84112

Reference

1. J. M. Keynes, *Monetary Reform* (Harcourt, Brace, New York, 1924), p. 88.

Rubella Vaccine

One point in Eichhorn's article (Research Topics, 20 Aug., p. 710) might be misinterpreted by the reader. It is correct that the rubella vaccine, RA 27/3, is not yet licensed in the United States and that the experimental studies in this country have been done with small groups. However, the vaccine is in use under license in Great Britain, France, and elsewhere. More than 200,000 people have received RA 27/3 vaccinations.

STANLEY A. PLOTKIN
Wistar Institute,
Thirty-sixth Street at Spruce,
Philadelphia, Pennsylvania 19104

Contamination of Distilled Water

I was intrigued by the report of Favero *et al.* (27 Aug., p. 836) concerning the growth of naturally occurring *Pseudomonas aeruginosa* in distilled water, and some questions "naturally occurred" to me. What were the concentrations of phosphate, nitrate, and organic carbon in their distilled water? How do these concentrations compare with those in high-quality deionized water? To what extent did the glassware contribute to the inorganic nutrients?

I would guess that an "on-line" water treatment system consisting of an ion-exchange cartridge, an activated charcoal cartridge, and a membrane filtration cartridge for sterilization would produce higher quality water and would be more convenient than "fresh" distilled water. The use of disposable plastic containers might further reduce the phosphate contamination.

PAUL J. THOMAS
Mayo Clinic,
Rochester, Minnesota 55901

Thomas raises several questions to which we also would like to have answers. We have not yet undertaken any extensive organic or inorganic chemical analyses of distilled waters that support the growth of our naturally occurring strain of *Pseudomonas aeruginosa.* Chambers and Clarke (*1*) have reported that bacterial growth occurred even in specially prepared water (that is, in an all glass still with H_2SO_4 and $KMnO_4$, filtration, and condensation), and resulted in cell concentrations up to 4×10^4 per milliliter. They also stated that the absence of bacteria in distilled water may be a basis for suspecting that the distilled water contains toxic material.

We have yet to examine a sample of distilled water in which *P. aeruginosa* will not grow regardless of how the water was prepared. As we pointed out, *P. aeruginosa* grows more slowly and reaches a lower maximum population in freshly collected distilled water than it does in the same kind of water that has been aseptically stored for several days. We have assumed that the carbon and nitrogen sources originate primarily but not exclusively in the air. In addition, it is known that *P. aeruginosa* can use a variety of organic compounds as carbon sources even when they are present in only trace amounts.

Although the "on-line" water treatment system suggested by Thomas may give a product of higher chemical quality and be more convenient than the use of conventionally prepared distilled water, most hospitals continue to use distilled water, storing and dispensing it from containers others than disposable plastic ware. As we pointed out, we were trying to reflect a situation that would "naturally occur" in most