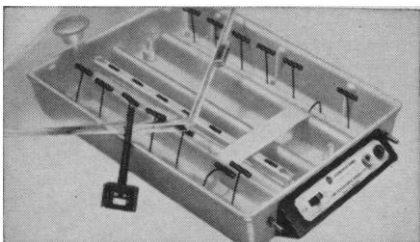


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attenuated mumps virus vaccine stated by Albrecht to have lasted for only 2 weeks were initially reported for a 7-month period (7–9). These data have now been extended over a 21-month period covering two mumps epidemic seasons.

The protective efficacy of Enders' live attenuated measles virus vaccine is in excess of 90 percent. This high level of protective efficacy has been demonstrated to persist for at least 4 years. The pattern of neutralizing antibody following Enders' vaccine parallels that for natural measles and has been demonstrated to remain essentially unchanged for at least 8 years, the longest period of observation, indicating that immunity will be lasting. Similar high level efficacy has been shown in the extensive measles vaccine trials carried out in West Africa, Chile, and other parts of the world. The savings in lives, to date, have numbered in the hundreds of thousands.

Once a live attenuated measles virus has produced a mild or inapparent infection with a clear-cut elevation of neutralizing antibodies, it would appear probable that natural, unmodified measles would not again occur, but that exposure to measles would either produce no symptoms or a highly modified infection. There would appear to be no justification for Albrecht's fears in this respect.

He also voices fears concerning extraneous agents of disease in the vaccines. In the production of vaccines under the strict procedures required by the U.S. Public Health Service (10), chick embryo cell cultures have been used which are prepared from eggs obtained from leukosis-free chickens. Had chick tissue been potentially dangerous, this should have been demonstrated in some of the millions of persons injected, starting in the 1930's, with the live attenuated yellow fever virus vaccine from chick tissue. Such vaccine was used long prior to demonstration of leukosis in chickens and in all probability contained this viral agent which apparently has been harmless to man in the intervening years. At present, no known extraneous viral agent has been found in chick tissue cultures used for vaccines. Also there is no known tumor virus pathogenic for chickens that has also been demonstrated as pathogenic for man.

Fears, such as Albrecht's, that needlessly have been raised concerning carefully controlled and licensed live attenuated viral vaccines have been

proved to be unfounded. The USPHS is fully cognizant of the prevention of thousands of deaths and of mental crippling by means of the live attenuated measles virus vaccine and should be fully supported in its urgent program to eradicate the natural disease. When a virus is of a single antigenic type, such as measles, a balance of nature can best be established by a live attenuated virus vaccine which produces an antibody curve, slightly lower but closely paralleling that of the natural disease.

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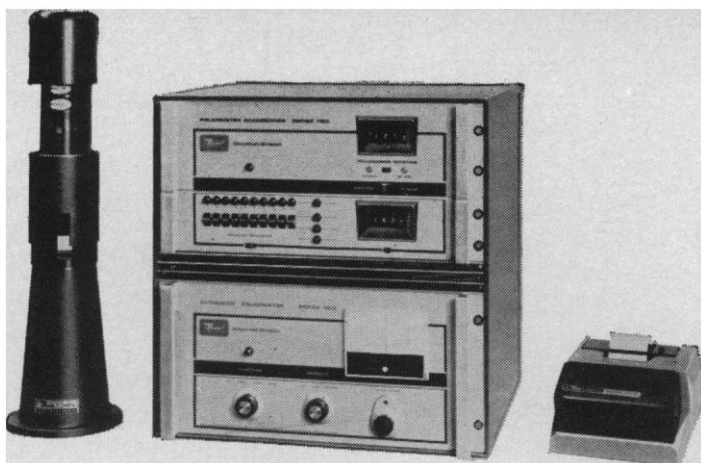
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Who Pays for Pollution?

In Wolfe's editorial "Industry and environment" (16 June, p. 1441), he suggests industry should play a role in controlling our environment and then inadvertently (I suppose) gives the reason why it will not: "... most of the cost of polluting land, air, and water ... are passed on to others. ..." He also suggests government agencies and universities could help by "conducting studies" and "conducting necessary research."

I contend that conducting studies and necessary research will not remedy the problems. In fact, studies and research have been done and will continue to be done without further prodding. What we need is a way to put the cost of polluting back where it belongs—on



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the polluter. This can be done by outright punitive action by the federal government. If one calls the *federal* air pollution office here in San Francisco about a specific problem, he will be immediately referred to a *local* enforcement agency. Why? Because there are no enforceable federal laws to place the burden of the cost of polluting the community on the offender.

Wolfe is correct in feeling that practical solutions can best come from industry itself. The difficulty is that there is no incentive. If the housewife could bring her fly-ash-covered linen to the president of an industry for rewashing and if the husband could demand the board of directors repaint his house; if the emphysema patient could insist the stockholders donate their lungs, then you can be sure industry would have an incentive and would find a solution.

Industry is not necessarily the sole culprit. Many fine companies treat their effluents effectively, but not because they are so compelled by strict laws. They do so to improve public relations or to recover a by-product. It does not matter who is the polluter. It matters that if the polluter is made to bear the cost of pollution (rather than the public), the polluter will soon find a way to stop polluting.

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Immobilizing Drugs Lethal to Swimming Mammals

Recent widespread use of central-nervous-system depressants in capture or restraint of wild animals has led to expansion of attempted telemetric experiments by greatly facilitating attachment of sensor-transmitters. In general, the use of many of these drugs on land animals has been successful once the appropriate dosage has been determined. For aquatic mammals in the water (especially cetaceans) attempts to use these drugs have been disastrous.

With very few exceptions, aquatic mammals swim with slightly negative buoyancy (that is, they are heavy rather than neutral or light), so that immobilization leads to sinking and drowning. Moreover, to simplify the situation a little, cetaceans breathe less automatically and more "on command" than terrestrial forms. As a result, early attempts to anesthetize porpoises led