

Organisms Causing Musty Odor Found

► THE CAUSE of musty odors has been isolated by three University of Iowa scientists.

Responsible for the unpleasant smell of damp basements, stagnant water and old potato bins are a group of organisms called actinomycetes, Drs. John D. Dougherty, Richard D. Campbell and Robert L. Morris have found. Drs. Dougherty and Morris are with the State Hygienic Laboratory at the University of Iowa, Iowa City. Dr. Campbell is in the chemistry department.

Actinomycetes, whose natural habitat is the soil, also grow abundantly on biological material and in water.

The sample analyzed in Iowa came originally from river water with a musty, earthy taste and smell. By culturing and processing the sample, the scientists were able to isolate the "smell" compound and to identify its chemical properties. Their work should be useful in selecting procedures for treating water, reported the researchers in *Science*, 152:1372, 1966.

• *Science News*, 89:480 June 18, 1966

PUBLIC HEALTH

Detergents May Help Determine Water Purity

► USE OF SYNTHETIC detergents may possess fringe benefits for individuals owning their own water supply and sewage disposal systems, a University of Wisconsin scientist said.

Undecomposed detergents found in drinking water are not harmful and have proved to be effective indicators of possible bacteriological contamination of a well.

In a joint project with the Wisconsin State Board of Health, Wisconsin researchers headed by Dr. M. Starr Nichols, professor emeritus, examined water samples from 2,167 privately owned shallow wells in different rural areas of the state.

Wells containing at least a trace of detergent were found to be twice as likely, on the average, to be contaminated as those containing none. Of all wells which contained detergent, 20% were found contaminated. Of those in which no detergent was present, nine percent were found unsafe.

The greater the amount of detergent in well water, the more likely it is to be contaminated, the UW researchers found. Seventeen percent of those in which water contained less than one part per million (ppm) of detergent were contaminated, while more than 43% of well waters containing three to ten ppm were found unsafe.

One reason for the effectiveness of detergents as pollution indicators is

the relative size of the molecule. The detergent molecule is about 20 times smaller than the smallest viruses commonly found in waste water and 1,000 times smaller than bacteria.

Thus, soil filtration of sewage will remove bacteria much more readily than viruses, viruses much more readily than detergent molecules. Presumably, if a well is in process of being contaminated detergent will appear in

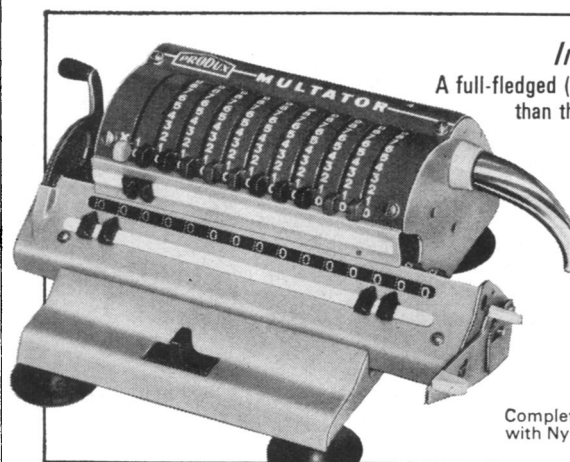
its water before viruses, and viruses before bacteria.

"Detection of bacteria and viruses in drinking water is not practical as a control measure at the present time," said Prof. Nichols, "but detergents are easily detected and therefore useful."

Though the presence of detergent in drinking water indicates possible contamination, its absence is no assurance that well water is safe.

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