Bacteria used to measure richness or poorness of sea water

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Bacteria specially grown as metabolic cripples are used at the University of California's Scripps Institution of Oceanography to measure the richness or poorness of sea water.

Research has shown that such trace substances as vitamins might possibly account for the numbers of sea creatures produced in a given body of water. The quantities of these substances in the sea is so small that to find them by ordinary chemical methods is an impossibly massive task.

William L. Belser, Assistant Research Biologist, lets bacteria do the work for him. Exposing them to ultraviolet light, he produces mutant strains that cannot synthesize certain biochemical growth factors, such as Biotin, vitamin H. Like human victims of diabetes, they must obtain the missing substance from external sources, in their case, the sea.

Belser places his cultures in samples of sea waters from different parts of the ocean. If they thrive, he knows that the growth factor which they cannot synthesize is present in the water. The level of growth attained allows him to measure the amount of the substance present.

The bacteria can be used to measure certain biochemical substances in dilutions as great as two onemillionths of a gram per liter (about one teaspoonful to 500,000 gallons of water--as much water as would fill backyard swimming pools).

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