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## Preface

The methods included in *Environmental Microbiology: Methods and Protocols* can be placed in the categories “Communities and Biofilms,” “Fermented Milks,” “Recovery and Determination of Nucleic Acids,” and the review section, containing chapters on the endophytic bacterium, *Bacillus mojavensis*, the engineering of bacteria to enhance their ability to carry out bioremediation of aromatic compounds, using the hemoglobin gene from a strain of *Vitreoscilla* spp., and the use of chemical shift reagents and  $^{23}\text{Na}$  NMR to study sodium gradients in microorganisms, all of which should be of interest to investigators in these fields.

The subjects treated within the different categories also cover a wide range, with methods ranging from those for the study of marine organisms, through those for the investigation of microorganisms occurring in ground waters, including subsurface ground waters, to other types of environmental waters, to as varied subjects as the biodiversity of yeasts found in northwest Argentina.

The range of topics described in the Fermented Milks section is smaller, but significant for investigators in areas concerned with milk as an item of foods for infants, small children, and even adults.

The section on recovery and determination of nucleic acids and other compounds affecting, and affected by, microorganisms also covers a considerable range, as well as including methods for some of the enzymes produced by plant pathogens and methods for obtaining microbial species tolerant of some inhibitors, such as heavy metals. Thus, there is something for most investigators concerned with microorganisms in their native environments.

There is one aspect of *Environmental Microbiology: Methods and Protocols* concerned with the special problem of microorganisms in the environment, that of the so-called “non-culturable” forms. This problem has been solved, at least partially, by growing the organisms in a two-chambered system in which the organisms of interest are grown in a central chamber, separated by a semipermeable membrane from an outer compartment, in which a mixed culture of an unidentified group of organisms is grown, and produces unidentified (as yet) growth factors for the organisms in the central chamber. This problem has existed for at least 50 years, for soil microbiologists and probably others. The method is described in a recent issue of *Science*. Unfortunately, the editors were unable to find an author willing, or able to take the time, to write about this subject.

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