

13 Cloning the Metagenome: Culture-independent Access to the Diversity and Functions of the Uncultivated Microbial World

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◆◆◆◆◆ INTRODUCTION

For more than a century, the gold standard in microbiology has been to achieve pure cultures of microorganisms for laboratory study. The central role of cultivation in microbiology derives from the origins of the field, which were rooted in the study of disease etiology and the uses of microorganisms for processes related to making foods and beverages. The ecological study of microorganisms has advanced notably where a single microbial taxon performs an ecological role of major effect.

With the revelation over the past two decades of a vast diversity of previously unsuspected, and largely uncultivated, microflora inhabiting diverse natural environments throughout the biosphere, microbiology has undergone a revolution. The application of molecular biology methods