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## THE FILTRATION OF BACTERIA<sup>1</sup>

### STUDIES IN BACTERIAL METABOLISM CIII

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#### INTRODUCTION

THE belief exists in some laboratories that bacteria, ordinarily deemed unfilterable, may under certain circumstances become so altered by chemical means, by cultivation for long periods of time in fluid media or through animal inoculation as to find their way through the pores of filters that would ordinarily restrain passage of the corresponding bacteria in their unfiltered state. The literature on this subject has become quite voluminous,<sup>2</sup> and opinion is now rather sharply divided into two groups; the "filtrationists,"

those who believe that bacteria may be filtered in some manner, and the "non-filtrationists," those who deny this possibility. This separation into two opposing camps is quite natural, because if one admits the possibility of filtration with one typical, ordinarily non-filterable microbe, one would rather logically be forced to admit that under suitable conditions all ordinary bacteria might be made filterable.

The problem of bacterial filterability has more than academic significance. There is a heterogeneous but formidable group of diseases of man and animals to which the term "filterable virus" is applied. The natural history of many of these "filterable virus" diseases—their clinical course, their method of dissemination and of inducing immunity—is generically akin to microbial diseases in which the etiological

<sup>1</sup> De Lamar Lecture, Johns Hopkins University School of Hygiene and Public Health, January 12, 1932.

<sup>2</sup> It is reviewed carefully by Klieneberger, "Bakterienpleomorphismus und Bakterienentwicklungsgänge," *Erg. d. Hyg., Bakt., Immunitätsforsch. u. Exp. Therapie*, Berlin, 11, 499-555. 1930.

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