

Researches have also been made in this direction by Hallier, Klob & Thorm, Debary, Cohn, Cunningham and Lewis. Dr. J. C. Peters, New York states in the *Medical Record* that Dr. Dundas Thompson and Dr. Hassal discovered vibrios in the rice-water discharges, and in experimenting with them found out of a great many drugs only tannin, chlorine water and dilute sulphuric, hydrochloric and nitric acids were capable of destroying them.

No other theory of cholera or other infectious disease would so fully explain all their characteristic features as the doctrine that they depend on distinct species of micro-organisms, which has been advocated so long by the ablest writers on the ætiology of disease. The recognised power the virus has of multiplying itself within and outside the body, the fact that it develops only when organic nutriment is furnished, and requires heat, moisture and oxygen, and the deleterious influence of cold, high temperatures and drugs inimical to plant life; the power the poison has of retaining its virulence on fumilis, etc., after long intervals; the fact that the poison of each infectious disease has distinct characteristic actions upon the system, which are uniformly maintained, although in varying degrees; the period of incubation; self-limitation and definite duration, can only be clearly explained by the theory that the cause is a living organism, each disease having a distinct species of parasite. The fact, already fully demonstrated, that some infectious diseases are produced by parasitic plants, would seem to place the matter beyond theory and to be a very strong argument in favor of the view that all are likely to own a similar cause, hence an important field of bacterioscopic enquiry opens up: the discovery of the germ belonging to each affection and the study of its peculiar characteristics, what circumstances and agents favor its development, and what hinders. In this way we may hope that, in the near future, the treatment of these affections will be removed from the empiricism which has hitherto prevailed, and a rational, scientific system of therapeutics pointed out.

As yet the agents found to be destructive to these bacteria outside the body would, in the strength required, be fatal to the patient if administered as remedies. The discoverer of a remedy which will arrest the development of bacteria in the system, and at the same time be

innocuous to the host, will confer a boon on humanity that will place his name among those of the highest rank of human benefactors.

John Tyndall, in his introduction to the life and labors of Louis Pasteur, written recently by the latter's son-in-law, and translated by Lady Claud Hamilton, states in reference to this subject: "never before during the long period of its history did a day like the present dawn upon the science and art of medicine; indeed previous to the discoveries of recent time medicine was not a science but a collection of empirical rules depending for this interpretation and application upon the sagacity of the physician." "A great scientific theory has never been accepted without opposition. The theory of gravitation, the theory of undulation, the theory of evolution, the dynamical theory of heat, all had to push their way through conflict to victory, and so it has been with the germ theory of communicable diseases." Where the mind of genius discerns the distant truth which it pursues the mind not so gifted discerns nothing, but the extravagance which it avoids.

Bacteriology will doubtless soon become a part of the regular curriculum of medical studies. In Germany the Government last year summoned to Berlin medical men from various parts of the empire to study the method of Koch and others for investigating bacteria and micro-organisms, and other countries will doubtless soon follow in this line of advancement.

All believers in the germ theory were filled with hope when it was announced that Dr. Robert Koch, chief of the German Scientific Commission for the Investigation of Cholera, had gone to Calcutta to investigate the supposed cholera germ. His brilliant discovery of the bacillus tuberculosis, in 1882, had already caused him in the estimation of the scientific world to be regarded as the most eminent and reliable living bacteriologist.

In his report of January, 1884, he announced the discovery of a bacillus occurring invariably in the cholera discharges and intestinal contents, and also in the intestinal mucous membrane, but not in the stomach.

The lower part of the ileum was the chief seat of the bacilli. When Peyer's patches were reddened he found a considerable invasion of bacteria occurring partly within the tubular glands, partly between the epithelium and basement membrane, and in some parts deeper still. The bacilli were found most abundantly in acute cases, in later stages they