

and converted into a ministering angel, may be set on the track of an incubating disease, and it shall arrest even rabies in its baleful course, and, having arrested, annihilate it. Such are some of the very surprising results of our very brief acquaintance with micro-organisms. When we know them better and can consult their peculiarities, direct their antipathies, regulate their interactions, and, it may be, utilize their very gambols, who shall presume to say that we have not passed the "winter of our discontent," and reached a point whence we can decry a happier future for man and beast. But while a goodly number of intelligent observers, impelled by enthusiasm and unrestrained by caution, are attracted by the glare of these splendid discoveries, there are others of a slower and less credulous temperament; who, while they yield to none in their desire for truth, would have every observation leading to its elucidation tested with the most scrupulous care and rendered unassailable on every side. To minds of this world, objections present themselves which have been overlooked or but lightly regarded by observers of the other class. First, that the healthy body is endowed with a superabundant store of vitality, which enables it to resist the encroachments of the lower vegetable organism; and that it is only when a depression of this force sufficient to place the individual in a condition very near its extinction occurs, that the body is liable to their invasions. Secondly, time is a very necessary condition for the development of micro-organisms; and in the sudden transitions from health to disease occasionally witnessed there is no time for the growth and general dispersion of the micro-organisms. Thirdly, in the production of disease by inoculation something besides the germ is introduced—to wit, the animal fluid in which it floats. Fourthly, it must be conceded that in any given culture out of the body the micro-organisms are but the outcome of the changes going on in the albuminous medium. Fifthly, in the production by cultivation of those germs which are said to retain their virulence, no attempt has been made to distinguish between the action of the micro-organisms themselves

and that of the attendant fluid. To assume that it is the micro-organism and not the fluid which produces a given result after inoculation is to exclude one-half of the facts from the argument, and, it may be, the more important half.

From the foregoing considerations, I think it unreasonable to assent to the germ theory of disease, and I can only regard it as another of the many instances in medicine and out of it where cause and effect have not been discriminated. Setting aside, therefore, this theory, I shall endeavor to prove that the disease under consideration is merely the defect of derangement of function. I trace those variations of health which constitute disease to two causes, acting either separately or together—viz: (1) a variation of the external conditions of life; and (2) a diminution of the oxydising action of the blood, either from some fault of the hæmoglobin or of the protoplasm to be oxydised. Given pure air, and equable temperature and moisture, with muscular exercise proportionate to the nutrition of the body, the living being is attuned to the conditions of his existence; the fire within burns steadily and cheerfully, and the products are normal and proportionate in amount. Let disproportion now arise in any one of these conditions, and an abnormal and, so far, morbid state results. Within certain limits the healthy body can accommodate itself with facility to considerable variations in the external conditions, and those are the delicate who cannot readily do this, and who, in the transition process, are liable to develop abnormal action, or, in other words disease. These are truisms which in the present phase of medical thought will bear repetition, and, as I hope to show further on, they are very applicable to the subject which we have under consideration. In a large community there are many persons possessing identical constitutions, and of these there are, at any given time, some who are in an identical state of body; if these are simultaneously exposed upon the same soil, to the same heats and chills on the same day, we should expect in the main the same results to follow, it being in such a case both unnecessary and unreasonable to assume contagion, each case of