

incessant activity, one of the greatest forces which govern matter and determine its transformations. In applying all the faculties of his deeply investigating mind to the study of these infinitely small beings, much more powerful than the antediluvian monsters and often much more dangerous, M. Pasteur has succeeded in watching them at work in catching the play of their functions and in establishing their relations to the phenomena of fermentation of which they are necessary agents.

These micro-organisms swarm by millions in the atmosphere. They lie everywhere ; our clothes, our furniture, our books, the walls, the hangings of our houses are covered with them. The water we use for our ablutions, the water which purifies, as we fancy, the things it washes, the water we drink, how many microbes does it not contain and nourish? Miguel has demonstrated that a single glass of Seine water contained 300,000 microbes. Evidently, all these micro-organisms are not malefactors : many of them are, on the contrary, for us very useful auxiliaries, others are quite harmless or indifferent. But mixed with these indifferent germs, there exists around us an immense quantity of them which are formidable. Such are the germs of infectious and contagious diseases, especially during epidemics.

These ferments, introduced with food into our stomach, feed themselves upon what we have prepared for our own nutrition ; they are our guests, our parasites, and live upon the portion of our aliments which we do not consume, clients who eat the leavings of the table. A great number of them are immediately killed by the chlorhydric acid of the gastric juice ; among those remaining some work for us, playing an important role in the digestive transformation of alimentary substances, but more often they openly work against us.

It has been thoroughly demonstrated by recent investigations, that the pathogenic microbes secrete, by the fact of decomposition produced by their vital action, special toxic substances, real nitrogenous bases similar to the alkaloids extracted from vegetables, such as quinine, morphine, strychnine, which dissolved in the fluids of the organism produce a true poisoning. It is they which incessantly fabricate in the digestive tube compound ammonia, such as indol, leucin, tyrosin, phenol, scatol. Carbonic acid and other gases are set free, such as for example, sulphurated hydrogen, and the products secreted by these