

is not our intention, therefore, in the course of lectures of which this is the first, to add to the already heavy burdens of the hard-working dental student by making a bacteriologist of him, but simply to draw from bacteriology the facts which have a special bearing on dentistry, and from which he may derive benefit in his dental work.

Before considering in detail the bearings of this science upon dentistry, it would be well briefly to sketch its history so as to obtain a better grasp of the subject, and appreciate better its wonderful development.

Curiously enough, when we look back into the early history of bacteriology, we find that the first observations were made upon the bacteria of the teeth. Leeuwenhoek, the father of microscopy, in 1683, examining in his enthusiasm everything which might contain his newly discovered "animalculæ," says that although he did his utmost to keep his teeth white and clean, he still found in the white substances between them five different kinds which he figured and which we have to-day no difficulty in recognizing as bacteria. One especially is so characteristically drawn that no one who had ever seen it under the microscope would fail to recognize the form which we now call *Spirillum sputignum*—the spirillum of saliva.

From these discoveries to the present day is a long distance in time, yet for years, nay, for a century and a half, observers contented themselves with simply repeating and confirming Leeuwenhoek's observations, and falling into his error of looking upon bacteria, whenever found, as animalculæ.

Not until 1833 was there even a hint as to their true nature, and it was only in 1859 that Davaine, a French physician, showed conclusively that they were vegetable organisms. Since Davaine, the science has grown apace, but yet it would never have been more than a sub-department of biology if it had not been for two circumstances in its development.

The first of these was the battle which engaged the scientific mind during the first half of this century as to the spontaneous origin of life.

It had been observed when organic infusions, animal or vegetable, were placed in sealed flasks, and then boiled, that occasionally after a certain length of time they began to undergo putrefaction, or to ferment, and that when examined under the microscope, they were seen to be swarming with bacterial life. As it was generally conceded that the temperature of boiling water would destroy all life, it was thought that this reappearance of life in the boiled infusions was due to spontaneous generation; that is, that new life had been spontaneously produced in these infusions by chemical methods. It is easy to understand what a storm such an idea would arouse in the scientific world, and it is one of the most interesting subjects in the warfare of science to trace it to its final settlement. We have