

Pasteur answered the rhetoric of his opponents, by constructing little glass flasks, with long curved necks, making it more difficult for germs to enter by means of the air. Pasteur was slowly running down his opponents.

Then Pouchet said: "But how can germs be numerous enough to develop in every organic mixture? Such a crowd of them would produce a thick mist as dense as iron." The clubs and salons said there was something in Pouchet's question.

Pasteur redoubled his energy. He examined the air of cellars, but could find no absolutely sterile zone. Next year with seventy-three flasks he started for the mountain country. Twenty of his flasks he opened near his father's house at Arbois; then he went on to Salins; after that to Chamonix, in the higher Alps; twenty flasks were opened on the "mer de glace." In nineteen of them no change took place.

Pouchet, on the other hand, went to Sicily, to Etna, out to sea, and declared "he found air everywhere favorable to organic genesis." The French world now seemed largely against Pasteur's contention.

Pasteur (1861) maintained, after the most constantly repeated tests, his conviction that the ferments changing sugar, mannite, etc., into various acids were really "infusory animalculae," living and multiplying indefinitely, without requiring any air. We know that his expression "infusory animalculae" was incorrect, still he was moving in the right line. Pasteur's friends unwisely brought up his name as a candidate for membership in the Academy of Sciences. But though defeated, he was elected in the following year.

Now Pasteur's positions began to gain ground. An attempt was made to have the question settled by a Commission of the Academy, but this failed.

After years of repose, the question broke out in 1877, when Dr. Bastian, an English physician, took ground in favor of spontaneous generation. Pasteur went over the old ground, the more that the question was now more of a medical one, viz., the spontaneity of all diseases. John Tyndall, the English scientist, came to the aid of Pasteur and their joint opinion gave this doctrine its quietus, since which time it has not revived.

Silkworm Disease.

In 1864 Pasteur delivered a lecture on the subject of the contest. Shortly afterward the great experimenter was asked by Senator Dumas to undertake the study of a question of great moment to France and other countries of the south of Europe. A request had come from the town of Alais. No less than thirty-five hundred proprietors asked for a study of the disease among silkworms, which was ruining their industry. Pasteur replied that he had never touched a silkworm, but he would test the matter. This trade in silk in Pasteur's youth was valued at twenty millions of dollars. Italy, Spain and other countries were suffering in like manner. The mulberry tree, on which the worms fed, was called the Tree of Gold, on account of the rich returns of this industry.

This destructive disease was not understood. Corpuscles appeared on the silkworms, the spots being like pepper grains, and hence the name given in the patois of the country "pebre" or pepper disease. On investigation Pasteur found every imaginable remedy being tried: sulphur, charcoal, mustard meal, ashes, soot, quinine powder; washing, syringing, fumigation, but all without avail. The worms languished, many died; of the survivors the moths were diseased and deformed. Bad seed (eggs) was the cause of the disease. The people were in despair.

Pasteur soon said that the disease must be cut off at its source. Only