He made great contributions in the fields of chemistry, microbiology and medicine. He proved that microorganisms caused diseases; developed and used vaccines for Anthrax in sheep, and most importantly for the dreaded rabies. He discovered pasteurization and also saved the vinegar, wine, beer, and dairy industries. He was Louis Pasteur and this is the story of how he saved the silk industry as well.

Since 1845, a strange disease of silkworm had broken out in France, Italy, Spain, Greece and Turkey, and had spread like wildfire. The flourishing silk industry of France was almost wiped out because of this havoc. Pasteur’s one time Professor Mr. Dumas asked Pasteur to end to the problem. He said, “I have just come from South France. It is really terrible. The prosperous silk country has lost all its charm because of this strange disease of silkworms. It is disastrous. The economy of the state has collapsed and my people are starving.” His voice was choked and trembling. There were tears in his eyes.

Finally, Pasteur made up his mind and proceeded to South France and in June, established a temporary laboratory in Aley. The situation was unimaginable. There was total chaos. While some farmers were sprinkling wine on the mulberry leaves, others dusted Sulphur on the worms. Even though these steps were of no use, they were blindly following such practices.

Pasteur had to start from scratch. He went through all the available literature and held long discussions with the sericulturists. The silkworm rearers were totally disgusted at his great ignorance!

Combating the Corpuscles
The disease that slaughtered the silk industry was called Pebrine, as the diseased worms were covered with black pepper-like spots (pebre in French means pepper). Thanks to Pasteur and his microscope, he soon found out that the tiny globules (corpuscles) seen under the microscope were related to the disease.

He called the agricultural committee and advised them to check the fatty tissue of father and mother moths below their skin for such spores. “If such spores are not found you can use these eggs for a healthy generation,” he declared.

The committee members were taken aback in the beginning, as most of them had not even seen a microscope before! But Pasteur could convince them. Meanwhile, he started touring the sericultural areas, convincing the sericulturists and cheering them up, giving lectures, working in the lab, directing his assistants in their work, answering hundreds of queries of sericulturists by dictating letters to Madam Pasteur. It was a hectic period for him.
SHORT FEATURE

Where are the Springs?
For results, he had to wait until the next rearing season. He was quite hopeful about a positive outcome. But in the spring the big bubble of hope burst. The disease had again surfaced back.

This time, with great difficulty, Pasteur procured two batches of worms, one healthy and the other infected with pebrine for further study. In the meantime, he had to rush to Arbois as his father passed away. On his return, he observed the disease behaviour of Pebrine and came to a conclusion: the disease is hereditary but it is difficult to judge at what stage the symptoms appear. The disease can be confirmed at the moth stage.

So, he crushed the moths to check for pebrine spores. He used the eggs of such disease-free moths for the next rearing. Once again he had to wait until the next spring for the results to surface. So, he went back to Paris to attend his research work there. But a tragedy awaited him. His youngest daughter Kemil died of illness. In 1866, with a heavy heart he returned to Aley. But before he could resume his work, his daughter Sesil died of typhoid. The totally shaken Pasteur soon realized that it was some other disease but not pebrine. He found that it was not very difficult to keep away this disease called ‘Flacherie’, the main symptom of which was that the worms go inactive and die during spinning. He suggested sorting out such worms separately. During the next year, the farmers who followed Pasteur’s advice harvested healthy crops. However, there were always controversies and criticism about his work, especially spontaneous generation, rabies and pebrine. The propaganda against him reached such a stage that even in the schools there were two camps – Pasteurians and Anti-Pasteurians!

In 1886, Henri de Rochefort, a famous journalist, even filed a defamation case against Pasteur accusing him of spreading rabies instead of curing the patients. Although badly hurt, Pasteur reacted very coolly: “I invite will all my heart both criticism and judgments. But I am intolerant of frivolous contradiction and prejudices; I hate vulgar skepticism which raises doubts on the system. Instead, I invite militant skepticism which makes a method out of the doubt and which is governed by the motto – some more light.”

In 1888, the Pasteur Institute was established for the purpose of undertaking fundamental research in the prevention and treatment of rabies. Louis Pasteur headed this Institute until his last day.

The beauty of Pasteur’s work lay in the complete solution to the problem. He was not only identifying the agent responsible for the disease but also finding a remedy for it.

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Saving the Silk Industry
The next year, in February 1867, he started receiving letters from those sericulture farmers to whom he had distributed the disease-free laying. As expected, most of them were getting healthy crops. But with few farmers the crops were again ‘spoilt’. The disappointed Pasteur soon realized that it was some other disease but not pebrine.

He found that it was not very difficult to keep away this disease called ‘Flacherie’, the main symptom of which was that the worms go inactive and die during spinning. He suggested sorting out such worms separately. During the next year, the farmers who followed Pasteur’s advice harvested healthy crops. Pasteur was very happy because he was successful in meeting the expectations of Mr. Dumas. The professor was mighty proud that his dear student Pasteur had saved the silk industry not only of France but also of the world!

In 1867, Emperor Nepoleon III established a laboratory of physiological chemistry for Pasteur at Ecole Normale, where he began studies on spontaneous generation and proved the existence of micro-organisms. His work on pasteurization saved the vinegar, wine and beer industries.

In 1868, he was afflicted with hemiplegia on the left side. But great contributions were yet to come from him! In 1881, he perfected the technique of reducing the virulence of various disease-producing microorganisms. He succeeded in vaccinating the weakened organisms of anthrax to sheep against anthrax. Similarly, he was able to protect poultry birds from cholera. In 1885, he saved the life of a young boy who was bitten by a rabid dog by using the rabies inoculation he had just generated.

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