

quence during the early part of this year the mortality from smallpox amongst the unvaccinated has been frightful. About the very day, one hundred years later, on which he vaccinated the Phipps boy, we find those who were the most bitter opponents of his teachings, rushing to avail themselves of his precepts by being protected by vaccination.

Although Jenner little thought that micro-organisms played any role in disease, we find that the theory was by no means a new one, for fifty years previously Linnaeus had stated that minute organisms were the cause of many diseases. He named amongst others the plague, smallpox, measles, syphilis, dysentery and whooping-cough. Since Jenner's time, others, notably Ehrenberg, described "infusorial animals", which he said were the cause of many diseases affecting man. Ten years subsequently, Sir Henry Holland after studying the life history of the minute organisms seen in water with the microscope, came to the conclusion that many diseases must be due to the presence of organisms in the atmosphere which the microscope of the day was unable to demonstrate. The improvement in this instrument and in the preparation of structures for examination has opened up new avenues to knowledge. By these means we have been able to penetrate still deeper into the secrets of the organism, and through its revelations Virchow was able to promulgate the doctrine of cell pathology that has done so much to place the science of medicine on an intelligible basis. Improved methods of staining have enabled us to identify different structures in their minutest ramifications. It has made it possible to distinguish between active protoplasm and the material formed by it, and has revealed essential differences between cells otherwise apparently alike in all respects.

With its aid and working upon the lines commenced by Jenner, Pasteur and his co-workers have thrown much light upon the cause of specific diseases, as well as upon the means of fighting them. Pasteur's discovery and demonstration that the dependence of many diseases is upon the presence of minute organisms may be justly ranked with that of Harvey, both in regard to the far-reaching benefits which it has conferred upon mankind and for the simplicity of its origin. It contributes the most important of all the links yet made between science and therapeutics. It has completely upset the zymotic theory of many diseases, according to which the history and cause of these diseases were comparable to fermentation following the addition of yeast to a saccharine fluid.

Jenner's work was a standing illustration of the attenuation of a virus. It anticipated and pointed the way to the processes by which