SOME FEATURES OF THE PROGRESS OF MEDICINE DURING THE NINETEENTH CENTURY.*

By J. P. Shanley.

It is but the merest platitude to say that during the past century the science of medicine has advanced by leaps and bounds. It has raced along at express speed, dropping the trammels of empiricism and ignorance in its progress. Each new advance has scarcely been revealed when it has been overshadowed by newer discoveries still. Its rapid development may perhaps be best appreciated if it be remembered that the circulation of the blood through the heart and bloodvessels, the most fundamental fact in medicine, was unknown up to the middle of the seventeenth century. The fact of the circulation is now thoroughly familiar to the man in the street, but until William Harvey disclosed the true state of affairs, we know it was believed not only by the man in the street, if he thought about it at all, but also by the doctors and philosophers, that the arteries contained not blood, but air. It was only about the beginning of the nineteenth century that that most essential and most used instrument in the hands of the medical man, the stethoscope, was invented by Laennec. Until this time, too, such well-known and familiar diseases as typhoid, diphtheria and appendicitis had not even received their names. Though people died from them by the thousand they were not individually differentiated from many other disorders producing somewhat similar signs and symptoms. At this period also, the insane were generally very brutally treated, until Pinel, that noble-minded French physician, struck off not only the figurative, but the actual chains which so cruelly had bound them, did away with the abuses of drugging and blood-letting to which they had been subjected, and had them humanely treated in hospitals.

In the early part of our century four names stand out prominently in the annals of medical history, names which are to-day world-known and honoured. They are the names of four Irishmen, and of Dublin men at that: Robert Graves published such an admirable and complete description of exophthalmic goitre that the condition is still everywhere known as Graves' disease; William Stokes and Robert Adams made those important contributions to the study of disorder of the heart which are perpetuated in the eponymous title of Stokes-Adams' disease, and "Corrigan's pulse" universally commemorates the name of Sir Dominic Corrigan. John Cheyne and Abraham Colles, the founders of the Dublin School of Medicine, are names held in honour by every Dublin student to-day. Nor should we forget their contemporary, William Wallace, who introduced iodide of potash as a therapeutic agent in syphilis. It speaks highly for the early Dublin school that at

* Paper read at the Medical Society, University College, Dublin, March 13th, 1930.
a time when experimental and inductive methods of reasoning and research were first beginning to reap rich harvests for scientific workers all over the world, these names should not only be conspicuous, but should sparkle as brilliantly as any in that galaxy which ushered in the birth of scientific medicine.

Up to this time little or nothing was known about bacteria—indeed, bacteriology, as a science, now of such transcendental importance, was then unthought of. But in 1836 a rent was beginning to appear in the veil. Theodor Schwann was able to prove that spontaneous generation was a myth and that putrefaction was produced by living organisms, invisible to the naked eye, and which were destroyed if the surrounding air was heated or vitiated. When we consider that bacteria are so minute that about 3,000 of them could roost comfortably on the head of an ordinary pin, it is not to be wondered at that Schwann’s statements were at the time received with considerable scepticism, even by scientists. The microscope, however, was being rapidly perfected, and even as the telescope had given a glimpse of the infinitely vast in astronomy, it was to show dramatically the omnipresence around us of an invisible world of living things, which though individually so small as to be scarcely apparent when their size was multiplied a thousand times, yet are so numerous and so ubiquitous that their potentialities for evil are almost limitless; and by its aid these micro-organisms were to be shown to be the true cause of the great majority of the ills and diseases to which human flesh is heir.

And now appears on the horizon the giant figure of Louis Pasteur, whose genius was to rend the veil completely, and to found and establish bacteriological science on a firm footing. He was born in 1822 at Dôle, where his father, a veteran of Napoleon’s armies, was a tanner. The young Pasteur early acquired an interest in chemistry, and it was during his studies in fermentation that he discovered the fermentative micro-organisms in 1857. He showed that they could be killed by the action of heat. Pasteurisation is now applied to all perishable foodstuffs, and is, of course, of inestimable value in the feeding of infants. His remarkable success in saving the important silk industry in France, which was being crippled by a disease in the silk-worm, the bacterial cause of which he demonstrated, is well known. In rapid succession he discovered the bacteria of anthrax and chicken cholera, and finally crowned his life’s work in 1885 by instituting a treatment for hydrophobia, which is still the only effective one for this frightful disease.

The foundations of bacteriology were further strengthened by the work of a contemporary of Pasteur’s, Robert Koch, in Germany. In 1882 Koch discovered the bacillus of tuberculosis. Unfortunately, however, the great hopes that were then entertained that, with the discovery of the cause, the scourge of consumption would be wiped out, have not been realised. The study of bacteriology now spread rapidly. The pioneer of it in this