ideas of the causes of many diseases as to justify the belief that in the near future we may be able to combat diseases now classed as incurable.

Ingenious mechanical inventions have greatly assisted us in the diagnosis of diseases. The vaginal speculum and the stethoscope were in use in my early days. The opthalmoscope, foreshadowed by Babbage in 1847, and perfected by Von Helmholtz in 1851, stands pre-eminent as having given us a knowledge of the secrets of the eye. It has taught the oculist that he is not now obliged to class a number of deep-seated diseases of that organ under the head of "Amaurosis," a condition where the patient saw nothing, and the doctor also nothing. The microscope has vastly aided experimental research. Through it Virchow worked out the cellular pathology. The germ theory of disease owes its existence to it and chemistry. The blood and almost all of the tissues, secretions and structures of the body are being daily studied through it, with advantage. Indeed, that instrument has become as necessary to the practitioner of the present day as was the lancet in my early day. The laryngoscope, the otoscope, the endoscope, with many others, followed in quick succession. The thermometer, first introduced by Bourhaave, was little used until the clinical researches of Traube in 1856, established its value. It will now be found in the pocket of every medical practitioner. The incandescent electric lamp, recently devised by Stein, of Moscow, as an anodyne, is claimed by him to have produced almost "magical results" by reflecting the light upon the pained part.

The most distinguishing features of the period under review, from 1837 to 1891, have been *Anæsthetics*, *Antiseptics*, and the *Germ Theory* of disease. The brilliant discovery enabling the surgeon to wrap his patient in a painless sleep while subjected to the horrors of the operating table, is one of the greatest blessings ever conferred upon mankind. It is also a boon to the operator, whose feelings are no longer harrassed by the wailings and suffering of his patient. He can now perform his work with calmness and deliberation, thereby ensuring a happier result. Indeed, this power has paved the way to surgical operations, the performance of which would have been considered criminal prior to the discovery. Most of you are too young to have passed through the ordeal to which I allude; I can call to mind instances, where more than one was required to hold the sufferer, and his cries could be heard in the street. Though we occasionally witnessed the display of the "lion heart." When removing a man's arm at the shoulder joint, he ground his teeth shockingly. I asked him why he did so? he looked at me coolly and said, "well, Doctor, which shall I do, grit my teeth or squeal? I said to him, by all means grind away. The effort to deaden pain when under the surgeon's knife, can be traced to remote antiquity. Various anæsthetics were suggested, but none of them could be relied upon to produce the effect required. Sir Humphrey Davy was on the verge of a discovery when he inhaled "nitrous acid gas" for tooth-ache. But it was reserved for Morton, a dentist in Boston, who, in October, 1846, by his courage and perseverance established the fact that "Sulphuric æther" fulfilled nearly all the requirements. The next year Sir James Simpson introduced "Chloroform," which, on account of its small bulk, its pleasant flavour, and its rapid effect, soon superseded the use of "Sulphuric ether" in England and largely on the continent of Europe. But recent experience, establishing the fact that the deaths from chloroform are far more numerous than those from æther, has produced a reaction in favour of æther. This is so marked, that when in London in 1874, I saw nothing but chloroform used as an anæsthetic in the hospitals; when there 5 years ago, I did not see chloroform used once.

The cause of death from the administration of anæsthetics is a vexed question. The members of the Hyderabad commission contend that under chloroform the respiration always fails *before* heart syncope appears; hence the breathing should be watched, not the pulse. Others contend that the heart may and often does fail first. If it were established that the respiration always failed first, it would greatly relieve the mind of the anæsthetist, for by artificial respiration he would generally save his patient. If the heart fails first, he is almost powerless. That deaths take place with little or no warning to the anæsthetist, while every precaution has been observed, is a fact and a source of anxiety to him. Consequently he is justified in asking the question, which is the best and safest anæsthetic to be selected? and what rules should govern its exhibition.

There are various anæsthetics in use, chloroform, æther, methylene bichloride, A. C. E. mixture, ethyl bromide, and nitrous oxide. The first may be selected for prolonged