

of Cambridge, and others undertaken for the solution of the problem of spontaneous generation, brought fruitage to the human race little dreamed of by these wise philosophers. The genius of Mr. Lister seized the application of the thought, and with a patient, investigating spirit and painstaking toil, he worked out the fundamental factors of the *role* of ferments in wounds. It was not until rules could be formulated, based upon the scientific deduction, that operative wounds should be free from suppurative processes, hitherto considered almost necessary concomitants, that the proper conditions for the study of ligatures and sutures were rendered possible. Of necessity, in intimate association with the question of the treatment of operative wounds, arose *de novo* a most important and interesting chapter, devoted to the best means of controlling arterial hemorrhage. It was clear that the hitherto prevailing method of ligation, having the ends of the ligature long, extending from the wound, by so much at least, prevented primary union, while cutting the ligature short, and closing the wound, were fraught ever with disastrous consequences, since the septic ferments were thereby deeply buried. When aseptically applied, the constricting silken ligature too often proved an irritating foreign body, to be ultimately slowly eliminated.

In retrospect, with present knowledge, what seems simple factors of the problem, proved extremely difficult of solution. The conservatism of opinion, the prejudices of the large number of the surgical authorities of the time, wedded to present measures, misled by other phases of dominating thought—the so-called vital processes of inflammation, irritation, cell-proliferation, etc., engrossed the subject with many difficulties.

The demonstration that fermentation and suppuration in a wound resulted from the introducing of something from without, was the first real step of progress. To eliminate that something was the next problem for solution. It was clearly shown that the torsion of an artery, to procure rupture and intrafolding of its interior coat, might produce a permanent closure of the vessel, and that the living structures, unpoisoned by germ injection, possessed the power of easy disposition of the aseptic necrotic portion, devitalized by violence.

Histologic study demonstrated that the necrosed part did not undergo the changes which had formerly been supposed necessary for the elimination of dead material, known as suppuration, gangrene, etc., but that the part became invaded by living cells, which, little by little, produce a local change marked by early