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THE MEDICAL TIMES.

VOLUME L—NO. 19.]

KINGSTON, (CANADA), SATURDAY, NOVEMBER 8, 1873.

[PRICE FIVE CENTS.]

SURGERY.

THE PROGRESS OF SURGERY.

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There are two great schools of surgery in this country, the practical and the scientific, and to one or the other of these every surgeon will more or less distinctly incline. It is well, therefore, to examine the more distinctive characters of each of these schools, and to trace their more recent advances and endeavour to penetrate into their more immediate future. Firstly, then, to take the practical school, which is resplendent with many great and illustrious names, and which is, and ever has been, most popular in this country and most in accordance with the practical genius of the British people and their inborn and intuitive aptitude for mechanical pursuits and manipulative action. In considering the progress of surgery as a practical art, and determining the causes that have led to the great development of its mechanical and manipulative departments, it is not unprofitable to look back upon the surgery of forty years ago, and to give some attention to the influences which have led to its progress towards perfection.

A generation back the anatomical school of surgery had reached its acme of development. The study of practical anatomy, had been prosecuted with zeal by a chosen few who had successfully struggled against the popular prejudices brought to bear against it. These practical anatomists necessarily became the operating surgeons of the day. By them surgical anatomy was assiduously studied, and those operations which had for their basis a thorough knowledge of the relations and structure of different portions of the human frame, such as the ligation of arteries, herniotomy, and lithotomy, were often practised, and skillfully done. But although many operations were admirably and skillfully performed by some of the distinguished surgeons of that period, it is certain that a large proportion were done timidly, slowly, and often in a slovenly manner, without definite or precise rule. In fact, thirty-five years ago, surgery as a manipulative art had fallen into a sluggish and an inactive state. No advance had been made in the two greatest operations in surgery, that for stone in the bladder and for aneurism, since Cheselden, nearly a century before, had introduced his operation, or since Hunter had made his name immortal by his operation for the cure of aneurism. But while surgery was slumbering in the south, it had been gradually acquiring an extreme degree of activity in the north, where it had rapidly become perfected as an art by the skill, the energy, the teaching and example of a band of distinguished men, nearly contemporaneous, who gave lustre to the great school of surgery which at that time flourished in the northern metropolis. To Lizars and to Liston, to Syme and to Ferguson, British operative surgery

is deeply indebted for much that is its peculiar glory and its chief characteristics, which are boldness in conception, and rapidity, precision, and simplicity in the performance of operations. These surgeons used few and uncomplicated instruments, and they taught that the knife might be wielded in surgery, by a practiced hand, with the same skill and the same certainty that the master of a craft evinces in the handling of any instrument that is employed in his calling. In all respects Robert Liston was the foremost member of that distinguished band. His influence was soon felt after his arrival in London, and his example is often unconsciously followed in many an operating theatre of the present day. Cut off in the fulness of his matured experience and of his professional activity by a disease almost as sudden as it was premature, Liston died too early for the full accomplishment of his fame, but not too soon for the fruition of his example.

Preceding the death of Liston by a few months, there occurred an innovation which has tended more than anything else to extend the sphere of modern manipulative surgery. The introduction of anaesthetics has induced the patient to submit more readily to surgical operations of all kinds, and to subject himself to what would otherwise have been beyond the limits of human endurance. It has also tended to popularise operative surgery by inducing many practitioners to become operators who would otherwise have shrunk from the necessity of the daily infliction of pain as a part of their professional duty.

During the ten years which immediately preceded the introduction of anaesthetics, surgery partook of the great advance that characterised all the natural sciences, and the zeal with which it had been studied led to the establishment of various distinct departments within the precincts of the art itself, in each of which the treatment of numerous surgical affections by mechanical and operative means was diligently and extensively carried out. The gain that has resulted from this advance can never be lost, but is permanently secured to surgery and to humanity. There is no retrogression in surgery, and what our predecessors have done we can readily accomplish, and our successors will not fail in what we can do. But there must be a final limit to the development of manipulative surgery. The knife cannot always have fresh fields for conquest; and although methods of practice may be modified and varied, and even improved to some extent, it must be within a certain limit. That this limit has nearly, if not quite, been reached will appear evident if we reflect on the great achievements of modern operative surgery. Very little remains for the boldest to devise, or the most dexterous to perform.

With all these brilliant results and triumphs of the knife, practical surgery travelled in another direction, which is apparently so opposite that

at first sight it is difficult to understand how it could progress simultaneously and contemporaneously in both these lines. There has been, in fact, a tendency to limit the use of the knife by the application of various mechanical and manipulative aids, which is well illustrated in many branches of minor surgery, but especially in the treatment of aneurism and of stone in the bladder, where the tourniquet and compression, and more recently electricity, have been substituted for the ligature, and the lithotrite for the knife.

But if modern operative surgery has attained to so high a pitch and excellence, how stands it with that other great school—the scientific! Here, so far from having come within view of the final limit, we are as yet but halting on the threshold. The scientific school of surgery, which may be said to have been founded by the illustrious John Hunter, has been adorned by names the most brilliant in the annals of British surgery. The Bells and Abernethy, Travers and Brodie, by their teachings and their writings on surgical pathology, exercised most potent influence on their contemporaries, and laid the foundation of the science of modern surgery. But this school could not be considered as existing in a distinct form until surgical pathology itself was consolidated into a system in those admirable lectures which were delivered nearly a quarter of a century ago at the Royal College of Surgeons by Sir James Paget, and which have never been surpassed for depth of philosophic research and comprehensive scientific thought. Since then surgical pathology has been regarded as a distinct department.

In the advancement of scientific surgery every department of physical and natural science has been laid under contribution. Electricity, for instance, is beginning to play a distinct part in the diagnosis and treatment of surgical disease. The applications of the results of the more advanced doctrines and discoveries in natural science have equally tended to the realisation of some of the most important achievements of which modern surgery boasts. The idea of the employment of antiseptics in modern surgery was furnished to Lister by the study of the investigations of Pasteur on the production of disease in some of the lower forms of animals, by the development of organisms which, deposited on a favourable nidus, were capable of producing changes of a fermentative character. Nor has the more careful study of descriptive anatomy been without great importance in scientific surgery. By his observations on the ilio-femoral ligament, Bigelow has produced a complete revolution in our knowledge of the mechanism of dislocations at the hip-joint, and the methods of their reduction. But there is probably no collateral branch of knowledge that has a closer and more direct bearing on the advance of surgical science than hygiene. The relation of hygiene is twofold,—first, in its application to the