

The modern advancement of practical medicine and surgery : an inaugural address to the Medico-Chirurgical Society of Edinburgh / By James Y. Simpson.

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THE MODERN ADVANCEMENT

OF

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PRACTICAL MEDICINE AND SURGERY:

AN

INAUGURAL ADDRESS TO THE MEDICO-CHIRURGICAL

SOCIETY OF EDINBURGH.

BY

JAMES Y. SIMPSON, M.D.,

PRESIDENT OF THE SOCIETY.

"Indefesso acutissimorum ingeniorum studio magnus hodie rei medicæ cumulus accessit,
ut spem inde majorem hujus rei concipere possimus."—ALBERT THAER.

EDINBURGH:

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INAUGURAL ADDRESS.

My first duty, in taking the Chair as President of the Medico-Chirurgical Society, is a pleasant duty. For necessarily it consists in returning you my heartfelt thanks for the honour which you have bestowed upon me in electing me to this distinguished office. Believe me that I feel in no small degree flattered by this, as I have been in many previous instances, by the constant courtesy and unvarying kindness of you, my fellow practitioners, towards me. And any Scotchman may, indeed, well feel proud at being elected to preside over this, at once the largest and the most active medical society in this country.

On the utility of such Societies as the Medico-Chirurgical, it is quite unnecessary to dwell. Their advantages have been described to you by some of your former Presidents in terms far more clear and emphatic than any I could hope to employ. And I believe that at the present time there exists but one opinion in relation to the fact, that the study of medicine, like the study of other departments of practical science and art, has been vastly promoted by associations like our own. For all are ready to acknowledge, that the stimulus of mind upon mind, like the friction of iron upon iron, tends, in associations like this, to sharpen and strengthen all those intellectual faculties that are best calculated to promote our professional knowledge, and to develop the higher types of professional character; inasmuch as our mutual intercourse, criticisms, and discussions, form at once a school and an ordeal, teaching all of us constantly to become more zealous watchers of the medical phenomena occurring in our practice—more careful in our observation and classification of these phenomena—and more rigid in drawing correct deductions and generalisations from them.

None of us, I fear, can plead guiltless to the occasional influence of that besetting sin—indolence; and all will further, I believe, willingly confess, that sometimes its best cure has consisted in visits to such Societies as this, where the mere spectacle of other members actively at work has often stimulated us onwards to renewed efforts, and perhaps aroused within our breasts a commendable desire to imitate the professional industry and professional zeal of our neighbours. Few of us have ever on any occasion attended at this Society without hearing some new professional fact, or some new professional idea, calculated to arrest our attention, and destined perhaps to give us a new and increased interest

in some particular disease, or in some particular points in pathology or therapeutics. Societies, in short, like this, stimulate their members onwards by a kind of intellectual contagion; and as the human mind is swayed powerfully by imitation, we feel ourselves, in such associations as the present, often infected by the love of work, and the desire of extending professional knowledge, by having a constantly recurring opportunity of watching and witnessing these qualities manifested in the acts and ardour of others.

Such associations as this Society, banded together for the mutual cultivation of professional knowledge amongst its members, and the general advancement of medical science and medical art, have principally sprung up here and elsewhere within the course of the present century. Numbers of the most valuable professional essays, and even larger works, that have been published within the last fifty years, have originated in communications to some one or other of our medical societies. Many of these essays and works would never have been written but for this simple origin. And, doubtless, the progress that the healing art has made, during that period, has been in no small degree owing to the stimulating and regulating influence of medical association. In making this observation, I take it for granted that medical science *has* advanced greatly during the last half century,—that is to say, within the period that the Medico-Chirurgical Societies of London, Edinburgh, and similar institutions elsewhere, have been at work. Ever and anon we hear it doubted, by men both out and in the profession, whether medicine has made any marked progress at all during the period that I speak of. Many of us have heard it, I believe, broadly insinuated, that, while other departments of science and art have during the last fifty or sixty years been marching forwards at a pace previously unprecedented in their history, the art of healing has remained comparatively stationary. The late numerous and marvellous strides made in practical science are generally dated as commencing with the time at which our illustrious countryman WATT discovered, or rather re-discovered, the steam-engine; or since he and others taught mankind to subdue and harness that mighty but docile monster-power to different kinds of machinery, and trained it to accomplish for the human race, works which seemed formerly beyond all human powers and human hope. The resultant wonders of the steamboat and of the locomotive are inventions of the last thirty or forty years. And whilst, with the swift rush of the iron horse, our inert bodies are now carried from place to place with the speed of the bird, modern science has, of late years, achieved a still greater feat, for it has given us the means of sending even our very thoughts along that still more wondrous railway—the railway of the mind—the electric telegraph. The calculus of the mathematician, and the telescope of the astronomer, have lately proved to mankind that worlds, hitherto undreamt of, circle round our sun. And amidst the thousand startling discoveries and revolutions accomplished during the last half-century by the science of chemistry, no application of that science is perhaps more strange than the fact, that the chemist has taught the artist to convert that sun himself into a marvellous and matchless painter, who can elaborate the most difficult portraits, and the most complex landscapes and figure pictures, with a precision and minuteness unattainable by human art,—and with a rapidity so great, that—if properly tasked—he could finish countless gal-

series of them, in a briefer space of time than is occupied by one single dip and dash of the brush of a mortal artist.

But within the same wondrous period of progress during which these brilliant discoveries have been taking place in other departments of art, medicine, we can confidently maintain, has been by no means stationary. On the contrary, it has in various ways advanced by strides as marked and as great as those belonging to any other department of art taken individually. During the period I allude to, its progress has been in various directions and under various forms. To prove this statement, let me endeavour to recal to your recollection some of the principal changes that have taken place since the commencement of the present century, or since the era of Watt's discovery. Of course, I must allude only to the principal amongst them in such a limited address as the present. And for the same reason the subjects I select for remark must be selected arbitrarily, rather than systematically.

Some departments of medical science which were previously comparatively unknown, have in a manner arisen during the last fifty or sixty years, or at least have been practically systematised during it. At the present day we can probably scarcely appreciate the vast importance of some of these, and the advantage which a knowledge of them gives us as practitioners over the cultivators of medicine half a century ago. Nor, perhaps, would it be possible to see and appreciate them in their proper value, unless we were actually again re-deprived of their aid in pathology, diagnosis, and practice, and unless all the knowledge and advantages springing from them came to be suddenly obliterated and blotted out.

MORBID ANATOMY, for example, belongs in a great measure to this category. It is quite true that pathological anatomy was known, and in some degree appreciated, before the time I speak of, in the same way that the steam-engine was (as I have already hinted) known before the time of Watt. But it is equally certain that it is only during the last forty or fifty years that pathological anatomy has been so studied as to assume the importance of a leading and indispensable branch of medical knowledge.

In such a Society as this, it is, I believe, most unnecessary to dwell upon the advances made in medicine and surgery by the cultivation of pathological or necroscopic anatomy. And its uses have been various. By its light new diseases have been discovered, which were formerly all but unknown; such as emphysema of the lung, œdema glottidis, phlebitis, ramollisement of the brain, endocarditis, melanosis, etc. In other instances, it has enabled us to separate into specific diseases some affections which formerly were constantly confounded together, both in diagnosis and treatment, as the different species of inflammation of the lungs,—pleurisy, pneumonia, and bronchitis;—the different diseases of the heart;—the different forms of tumours, etc. In another range of its investigations, it has been the happy means of enabling us to study and trace accurately the general courses which inflammatory, tubercular, carcinomatous, and other such diseases are liable to follow, as well as the varieties which they are liable to present in different organs of the body. It has changed and corrected our ideas

of the nature of some diseases, by showing us, for example, that acute hydrocephalus, which was formerly supposed to be an instance of pure dropsy, is generally the result of inflammatory and acute tubercular disease; that the old nosological dropsies of the chest are almost all instances of disease of the heart; that the so-called fungus of the testicle is an inflammatory and curable, and not a malignant and incurable malady; that the gangrena senilis is a result of arterial inflammation and obstruction, and not of weakness, etc.

Pathological anatomy has further been of vast use negatively, by demonstrating to physicians that some affections that were formerly deemed inflammatory or organic are not so. How many lives has it saved, by proving that delirium tremens is not to be confounded, as it was at the commencement of the present century, with inflammation of the brain, and not to be treated on the principles of encephalic inflammation. It has already saved not a few limbs by showing, that in hysterical subjects there may occur affections simulating true disease of the synovial membrane of the joints, without any such disease being present; and it has taught us that many cases of local pain,—as in the irritable mamma or testicle, etc.—are cases not of local inflammation or organic derangement, but of local neuralgia.

These discoveries in pathological anatomy have been revealed by means of the scalpel. But it has latterly acquired other means to aid it in its researches, especially the microscope.

HISTOLOGICAL ANATOMY is of too late origin,—as applied at least to the investigation of morbid structures and effusions,—to allow the medical profession to judge definitely of the actual extent of usefulness that will be ultimately derived from the prosecution of it. But it has already by itself effected various interesting discoveries in relation to disease. It has, for example, revealed to us one or two affections, the very existence of which was previously unknown, as leucocythemia and sarcina ventriculi. It has disclosed to us the true nature of some diseases, and entirely changed and corrected our notions in respect to them; as by proving the actual cryptogamic structure of various eruptions upon the cutaneous and mucous surfaces of the body. Further, the microscope enables the pathologist to distinguish and determine, with additional accuracy, inflammatory products in the brain and other diseased parts, when their presence might be otherwise a matter of doubt. It affords us also a new element for ascertaining the malignant character of some tumours and discharges. And above all, it has eminently cleared up, and enlarged our knowledge of the nature, as well as of the diagnosis, of the different morbid states of the urine.

PATHOLOGICAL CHEMISTRY forms another department in which medicine has advanced much within the last half century, and in which it is, I believe, yet destined to advance perhaps infinitely more than in any other. Within the last few years organic chemistry has made enormous steps; but they are still too evidently the unsteady, tottering steps of a young giant. And a herculean amount of work and research remains, ere we can hope to attain all that we may confidently expect to derive in theoretical and practical medicine from the advances of patho-

logical chemistry. The fluids of the body are reckoned by physiologists, to be in relation to the solids, as ten to one; and in the eclecticism which marks the present era in medicine, physicians are evidently looking every year more and more to an extension in the knowledge of the nature and treatment of diseases, by new and important advances in humorism, rather than by any prospective advances in solidism. And there seems every reason to believe, that if we knew the pathological chemistry of the blood and fluids, as well as we know the pathological anatomy of the solids of the body—a knowledge I repeat that is to be longed for and worked for, but which has been only yet most slightly acquired—then medicine, both as a science and as an art, would probably make a forward march of the greatest moment. But even within the last quarter of a century, it has already progressed in no small degree by a cultivation of this department of study.

Perhaps the greatest individual discovery hitherto made in pathological chemistry and pathological anatomy, taken together, during the period of which I am speaking, has been the discovery, by Dr Bright, of the great frequency and great importance of *albumen* in the urine, as connected often, though certainly not always, with organic changes in the kidney, but indicating always to us some important change in the pathological chemistry of the blood itself. For this discovery, however, a very rude chemistry only was required—the testing, namely of the urine with heat or nitric acid. A higher and more refined organic chemistry may yet enable the physician to trace other special changes of perhaps equal importance in the urine, or in the remaining fluids of the body in other diseased states. Reasoning, indeed, from circumstances apart from the evidence of any actual chemical proof, many physicians at the present time have little doubt that the origin and essence of most specific forms of febrile affections will yet be found lurking in specific morbid states of the fluids of the body, rather than in any morbid states of the solids; that they are, in other words, referable to a pathological toxicology, rather than to a pathological anatomy. And let me add, that probably most local inflammations will yet also be traced back a step further, viz. to blood-poisoning—varying in its nature, in different types and species of these inflammations. It is most probably a special form of toxæmia or blood-poisoning for example, which produces the characteristic inflammations of the skin, and different parts of the mucous membrane seen in small-pox, in scarlatina, and in measles; and in each of these diseases there is doubtlessly a specific poison present. It is a form of blood-poison which, in all probability, gives rise to the numerous serous and other inflammations which are apt to spring up in patients suffering under albuminuria. It is, in all likelihood, some specific form of blood-poisoning that originates the specific inflammations of gout and rheumatism. Blood-poisoning of another variety, seems also to originate and beget the internal inflammatory complications seen so constantly in puerperal and in surgical fevers. A higher chemistry may, I repeat, enable us to detect the presence of special poisonous or morbid states of the blood, as the causes of these and of other varieties of diseases; and a higher chemistry also may yet perhaps enable us to neutralise these pathological poisons in the system; or to eject them from it, by the purgative or depurating action of the lungs, kidneys, intestinal canal, or other excretory organs or surfaces.

Morbid anatomy, histological anatomy, and pathological chemistry, the departments to which I have already adverted, have thus gained for us, during the last fifty years, much new and precious information regarding the actual character and nature of the diseases of the body. That information, however, would have been in a great degree sterile and barren, had physicians, at the same time, not discovered means for facilitating the detection of the presence of these diversified morbid states in the living body. Medical science has gained these requisite means, by having, within the last twenty or thirty years, immensely extended and improved the whole subject of

PHYSICAL DIAGNOSIS.—When we contrast medical practice at the present day with what medical practice was half a century ago, in nothing truly will we find it differing more than in the increased use which the modern physician makes in most cases of disease, of the different means of physical diagnosis. By its aid he is enabled, in many diseases, successfully to trace, in the different organs of the yet living patient, the exact pathological anatomy of these organs at the time of his examination. He tries by it, in other words, to discover by physical signs during life, that morbid anatomy of different organs which is revealed by the scalpel of the anatomist after death.

For ages the surgeon has enjoyed over the physician greatly superior diagnostic accuracy in the diseases belonging to his special department of the profession; because he could generally apply to the discrimination of them direct tactile examination, and even visual inspection of the affected part; or, in other words, because he could make complete use of these means of physical diagnosis, in forming his opinion with regard to their nature. Latterly, the surgeon has even increased his already great diagnostic facilities by the use of anæsthetics, and the adoption of the exploring needle. But in some classes of affections, the physician is now, in relation to physical diagnosis, almost on a par with the surgeon. In affections, for example, of the lungs and of the heart, the physician can trace accurately enough for practical purposes, the various changes that may be taking place in the pathological anatomy of these organs in the living subject, by the ear; or through the medium of auscultation and percussion. Analogous means of physical diagnosis have been, as you are aware, more or less successfully extended to other organs of the body, besides those contained within the chest; as to the throat and uterus. And as the precision of our knowledge of the maladies of these parts has been advanced by physical diagnosis, so also, in a corresponding degree, have the precision and the success of our treatment of them. Much more, however, is probably yet to be expected from an extension of the same important branch of study. For if the subject of pathological anatomy is, as some suppose, nearly exhausted, there is still, it must be confessed, great room for the advancement of the physical diagnosis during life of the pathological anatomy of some classes of organs as ascertained after death,—as, for example, that of the organs contained within the abdomen. And it may be that particular measures of physical diagnosis may yet be devised for these and other regions,—even though at the present moment the discovery of such measures, may seem to our minds as unlikely as the discovery of any accurate means of physical diagnosis for diseases

of the thorax appeared improbable and chimerical forty years ago, or before the time of Laennec.

Let me merely add on this matter, that the application of the microscope and of chemical tests to the urine and other fluids of the body, may be truly classed as a new department of physical diagnosis, and one which has been attended with great,—and no doubt will yet be attended with still greater,—results, in determining the nature, and consequently fixing more accurately, the treatment, of different diseases. How simple and precise, for example, is now the diagnosis of diabetes, oxaluria, and many morbid conditions of the urine, as compared with the state of knowledge in these matters only ten or twenty years ago.

MATERIA MEDICA has also effected some most remarkable advances within the last few years. In other words, there has not only been, through the instrumentality of morbid and histological anatomy, and of pathological chemistry, a great increase in our knowledge of the nature of diseases,—and, through physical diagnosis, a great increase in our knowledge of the discrimination of them,—but changes have taken place in the materia medica within the last twenty or thirty years, which have added much to the simplicity as well as the efficacy of the means and weapons by which practical medicine combats the different diseases that occur in the bodies of the sick. Some new medicinal powers have been added to the list of the Pharmacopœia, as iodine, hydrocyanic acid, gallic acid, cod-liver oil, etc. But the changes I advert to are of a much more important kind than this, though consisting truly, not in additions to our list of materia medica, but in modifications only of some of the more potent medicinal agents previously known and employed by physicians. In making this remark, I allude especially to the modern discovery, under the form of the alkaloids, of the active medicinal principles in our vegetable materia medica. By this discovery our therapeutic means have most undoubtedly been simplified and increased in power and value in a wonderful degree during the last quarter of a century. Only some twenty or thirty years ago there were no means of exhibiting our most powerful and useful vegetable medicines, except in the clumsy form of large powders, or nauseous decoctions, infusions, and tinctures. What an astonishing advance has been effected in this matter by the discovery in most of the principal vegetable remedies employed in medicine of alkaloid principles, as quinine, morphia, etc. Probably, ere many more years have elapsed, all our principal vegetable remedies will have been forced in this way to yield up, at the command of the chemist, their active and characteristic medicinal principles in such a concentrated and intensified form, that, like those I have already alluded to, they may be prescribed by the physician in doses not calculated, as heretofore, to nauseate the poor patient at the mere bare idea of swallowing drugs. Perhaps medical men have been, as a body, far too remiss and careless in following out the indication of the *jucundè* of Celsus in their prescriptions; and on this ground I, for one, believe that a better covering for a pill than we yet possess, or a way of disarming of their disagreeableness the revolting forms of most medicinal fluids and draughts, would in reality prove a more important discovery for the promotion and utility of true practical medicine, than the discovery of matters of apparently far more scientific bearing and mo-

ment. And it may be that, following out the same object, we may yet obtain means of fulfilling most of the indications in therapeutics, by administering medicines in other and less repulsive modes than through the stomach, as, by inhalation, inunction, injection, etc.; and that we may yet produce the therapeutic effect desired upon the system with as great certainty, and with infinitely more rapidity, by some of these methods, than by giving medicines of an analogous kind to be swallowed. Medicines, for example, when capable of being inhaled, affect the system with immensely greater rapidity than when the same medicines are taken into the stomach. And perhaps this same principle may yet be advantageously applied to practice in relation to some medicaments. If it is ever, for instance, a matter of importance in some inflammatory or other ailments, to affect the system rapidly and fully with mercury, why may not the chemist discover for us some gaseous and respirable form of mercurial combination, the inhalation of which should salivate in as many hours, as days are now required for the induction of that effect?

Our therapeutic means are most probably destined to have early and important additions made to them through other discoveries in chemistry, particularly in modern organic chemistry. For there can be little doubt that some of those almost innumerable compounds which organic chemistry is daily adding to its stores, will be found to be endowed with marked therapeutic properties, and that we may find in them most powerful and possibly concentrated forms of medicinal agents capable of fulfilling all our principal therapeutic indications,—and perhaps with properties superior to the drugs at present used,—as an antiperiodic, for example, even more certain than quinine, and yet without its occasional tendency to produce headache and nervous symptoms;—or a narcotic, as important as that most useful of all drugs—opium—and yet, without either its direct constipating effects, or its indirect tendency to excite subsequent nausea, vomiting, etc. Perhaps we may even gain new classes of remedies—as one capable of producing the elimination of morbid matters by that most extended of all mucous surfaces—the lining membrane of the lungs. And, let me add, the whole subject and theory of therapeutics—the department perhaps the least advanced at the present moment in medical science,—seems destined, if we may judge from various attendant circumstances, to undergo ere long some great and important revolutions, by which we will probably acquire a more certain and direct knowledge than we at present possess, of the mode or modes in which different medicines produce their special medicinal effects upon the body, or the different organs of it. Doubtlessly also, if such knowledge comes to be once acquired, it will enable us to apply our remedies with more accuracy and success, in the details of actual practice.

When we turn again from such advances in professional knowledge and professional resources as I have already alluded to, and consider the practical application of that knowledge and these resources in the departments of surgery and of medicine, we find that no small advances indeed have been made during the last half century in these branches of the healing art.

SURGERY, in various important matters, gives strong and undoubted evidences of sound and solid progress in these later times.

At the commencement of the present century, surgery, as a practical art, was perhaps advanced farther than the sister art of medicine. And when we compare its state at the commencement of the 19th century with its state two or three hundred years before that date, every one must confess that there had been ample room and verge for that advancement. For, assuredly, surgical operative practice must have formerly been a dreadful department of the profession, when the art of arresting hemorrhage by the power of a silken thread was still unknown or still unpractised; when in every operating theatre and at every operation, the chafing-dish and searing-iron were as indispensable as are now the lint and the ligatures of the modern surgeon; and when the cries and moans of the poor patient were smothered only, if smothered at all, by the hissing of the heated cauteries against the surface of his bleeding wounds. Long, however, as you are well aware, before the commencement of the present century, the ligature had been universally adopted by surgeons in their operations. Indeed, without it, it seems difficult to perceive how practical surgery in later times could have progressed at all. At the same time, is it not possible that surgery, by making one additional step (and finding some more advanced means to do without the irritation of a permanent ligature, and, perhaps, also without the rough and irritating sutures which are used to tie together the lips of the wound), may yet save the sides of the wound from the presence of any foreign body whatever within it, and thus add greatly to the chances of its speedy and general union by adhesive instead of suppurative inflammation?

Since the commencement of the present century, it is scarcely necessary for me to point out to you, that surgery has advanced in various and most important respects; as—

1. In far more clear and correct views than previously existed of the great pathological doctrines of inflammation and hemorrhage; and in the full and successful adaptation in many ways of a knowledge of these doctrines to the details of practice.

2. In many important improvements in individual operations, as in the operations for hernia and in amputations; and particularly in the general principles of operative treatment being now much more simple and rational, and much more safe and certain, than they previously were. As an illustration of this last remark, let me remind you of the surgery of aneurisms, and of the vast difference between the treatment of that disease now, by merely arresting or diminishing the arterial current going to the aneurism at a point above—and where the supplying vessel is itself sound—and the treatment of it sixty or seventy years ago, when the whole aneurismal sac was sometimes laid open, or the diseased limb itself amputated. And may not yet another step in advance possibly enable surgeons to cure this disease by some safe simple means or manipulations applied to the aneurismal tumour itself, and capable of producing the direct coagulation of blood in its interior,—without the risk and annoyance of either compression or ligature of the artery running to the aneurism?

3. Surgeons have lately introduced some altogether new modes of operating. Such is Tenotomy; and different novel and useful operations are now performed on the principle of tenotomy and subcutaneous incision. The extensive modern class of plastic operations belongs to the same category.

4. One or two individual operations, altogether new, have come into practice, and have been already the happy means of saving no small amount of human life; such as the ligature of the carotid, subclavian, and other large arteries; excision of the upper and lower jaws; the perineal incision in aggravated urethral strictures, etc.

5. Surgery, however, has made great advances in other matters. It has become every day more and more the boast and glory of the surgeon, that he is now able to heal and cure, without operation, cases and diseases in which, twenty or thirty years ago, operations were considered indispensable; and that he can often also substitute lesser operations for those of a more grave and dangerous character, as the excision of joints instead of the total and absolute amputation of the limb to which the diseased joint belongs; the removal of the ends of the bones in compound dislocations instead of the removal of the whole extremity; the cure of hydroceles and serous cysts by injections, instead of setons and incisions, etc. In many of the accidents and diseases of the skull, in compound fractures of the extremities, etc., etc., operative measures are far more rarely had recourse to now than they were at the commencement of the present century. In truth, while modern surgery has been, by the aid of anatomy, rendering all its operative procedures more simple and certain, it has been at the same time showing a marked and strong tendency towards the avoidance of all avoidable operations. Its present acknowledged aim is far more than formerly, the medical preservation and cure rather than the surgical amputation and cutting off of diseased parts. In many directions and respects, it is becoming every day more medical and less operative in its character. Witness the treatment of scrofulous bones, joints, etc., by diet, rest, iodine, cod-liver oil, instead of issues, incisions, and amputations. There will always, of course, be lesions, and diseases, and injuries, only capable of being remedied and removed by operative interference; but the perfection of surgery would perhaps be, what it never will be, the power, namely, of removing these lesions, and diseases, and injuries, without the assistance of knife and scalpel.

6. In few matters has surgery more improved than in the dressings and cure of wounds and external ulcers. For how much more simple, and how much more efficacious too, are the light water-dressing and slight medicinal lotions of modern surgery, than were the heavy and complex layers of ointments, lints, compresses, straps, bandages, etc., which were almost universally used by practitioners thirty or forty years ago?

7. Further, it has been principally during the time to which these observations apply, that the attention of the surgeon has been directed to the causes which lead to death after operations, with a view of trying to avoid and avert these causes. No point has been better established in modern times, than the important fact that, after surgical operations, surgical patients do not die of surgical complications, as hemorrhage, mortification, tetanus, etc., but die in from eighty to ninety per cent. from blood-poisoning and internal inflammations, as pleuritis,

pneumonia, peritonitis, etc. And I do believe that, at the present moment, any individual in the profession, who, in surgery or in midwifery, could point out some means of curing, or some prophylactic means of averting by antecedent treatment, the liability to these analogous or identical diseases,—viz., surgical or puerperal fever,—such a fortunate individual would, I say, make, in relation to surgery and midwifery, a greater and more important discovery than could possibly be attained in any other subject of investigation. Nor does such a result seem hopelessly unattainable, particularly when we see the occurrence of the disease in question—namely, surgical and puerperal fever—regulated by some special, constitutional, and other circumstances which we may yet be able to detect and remove. Surgical fever, for instance, sometimes shows no tendency to occur, even after the most severe forms of operation; whilst, in other individuals, it will occasionally spring up suddenly and fatally after the most trifling use of the knife or ligature. It will occur after almost all operations in one season or one hospital, and not after any operations in other seasons and other hospitals. And if its supervention is thus regulated and modified by various special circumstances, why may medical science not yet detect, and be able to control and regulate, these circumstances? Or if once the blood does become modified and altered, and the disease is actually established, why may we not hope for the discovery of means to eject the existing poison by some excretory organ, as the kidney, skin, lungs, etc.; or find even some direct antidote for the poison as it circulates in the blood itself?

Lastly, As one of the latest improvements in the art of surgery, and as one in which the members of this Society have taken no small interest, permit me to allude to the power which the surgeon now possesses of wrapping the patient in a painless anæsthetic sleep, while his body is being examined for painful injuries and diseases, or is being subjected to the cauteries, scalpels, sutures, saws, and pulleys of the operator,—thus almost realising, in this artificial abrogation of pain and suffering, those dreams of the mystic and marvellous which the fervid and fresh fancy of our younger days was taught to ascribe to the enchantment of the Arabian Nights, and the spells and charms of bygone ages.

MEDICINE, as a practical art, has advanced during the last half century, perhaps as remarkably, or still more remarkably, than surgery. The modern physician has acquired a far more extended knowledge than his predecessor of the last generation had, of the nature and diagnosis of the various diseases to which the body is liable. And in proportion as his knowledge has become more certain and precise, so also can he apply his medicinal measures and weapons with a greater certainty for the relief and removal of them. Besides, at the present day, the medical man knows, I believe, far better than was ascertained formerly, the wonderful resources of nature in the cure of many diseases, inflammatory as well as febrile; acute as well as chronic. He knows more precisely where he should leave nature to her own unassisted efforts, and where he ought to strike in to aid her with the resources of art.

In illustration of how much practical medicine has latterly progressed, I might again refer to various of the important advances to which I have already alluded under the previous heads of pathological anatomy, physical diagnosis, and

materia medica; and I might also dilate, if I had not already occupied your time too long, on many individual improvements in the practice of medicine, in relation to particular diseases,—as to the cure and banishment of scorbutus from our fleets; to the introduction in later times of iodine in the treatment of goitre and other affections; to the great and important changes that have taken place in the detection and treatment of the oxaluric, of the phosphatic, and other diatheses indicated by the state of the urine; to our increased knowledge of the nature, diagnosis, and treatment of the various local diseases of the head, chest, abdomen, and pelvis; to the increased certainty and success with which we can now adapt our curative treatment to the relief or removal of the numerous ailments complicated with, or originating in, typhus fever, scarlatina, albuminuria, rheumatism, gout, and other general diseases; and to the vast additions latterly made to our previous knowledge of the nature and unspeakable importance of various prophylactic, hygienic, and sanitary causes and measures. But let me content myself however with pointing more particularly to one or two special matters only, as illustrative of the fact that practical medicine, during the last fifty or sixty years, has made greater strides than practical surgery, or indeed than any other branch of practical knowledge whatever.

As an illustration, look for a moment at the whole class of infantile diseases. In the latter years of the last century, Dr William Hunter and the other leading English authorities in those days on such affections, believed and taught all infantile diseases to be the results either of fever, and to be treated with anti-febrile means; or the results of weakness, and to be treated with tonics and stimulants. The pathological investigations, however, of the last half century, have proved that the different organs of the child are liable to nearly as numerous and diversified morbid actions as the same organs are in after life; that the same classes or types of diseased action occur in the system of the child as occur in the system of the adult;—that some maladies, particularly of an inflammatory character, as pneumonia, peritonitis, encephalitis, etc., which were supposed to be very rare in infancy, are now known, on the contrary, to be exceedingly common during that fragile period of life;—and that the medical management of infantile maladies must be varied as in the adult, according to the individual disease present, and cannot be conducted on the belief that all affections in infancy are amenable to one or two modes of general treatment. The hygiene and management of infancy have in an equal degree improved. And the whole changes in these respects have produced great changes in the mortality of the earlier years of life. Formerly, towards the middle of the last century, fifty or sixty out of every hundred children born in London, died before they had reached their fifth year; but the mortality has gradually and steadily diminished, so that now not above thirty or thirty-five in every hundred die at that early period. At the present time there are above 600,000 children born annually in Great Britain. According to the above scale of mortality, above 300,000 of these would have perished formerly before they were five years old, now only about 200,000 die during the first five years of life; thus showing a saving of human life in this item alone, to the extent of at least 100,000 human beings a-year.

Or, with a view of tracing the recent progress of medicine, let us consider for a moment another and very numerous class of ailments, the most afflicting of all that can fall upon man—I mean those included under the general term of insanity. Everywhere some fifty or sixty years ago, up to the end of the last century, and in too many places far, far on in the present century, the unhappy maniac had seldom ought else for his dark lot but chains and a dungeon, starvation and filth; and little or nothing else for his treatment but stripes and scorn, provocations and contumely. At the commencement of the present century, the poor lunatic, when once incarcerated in an asylum, seemed utterly and for ever cut off from the friendship and charity of his fellow-mortals; he was a man buried, as it were, while he was yet alive, a being deemed incapable of human feelings, and almost undeserving of human sympathy. Need I say how changed all this is now; or what the happy results have been since such poor sufferers were duly subjected to proper medical and moral management; and were treated as men still possessing the feelings, and impulses, and affections of man. If any one wishes for a test of the modern march and progress of practical medicine, he would find a strong and startling criterion of it in tracing the internal history of any asylum fifty years ago, and contrasting it with what asylums are now.

In this rapid survey, let us look for a moment at only one other advancement in practical medicine since the days of Watt—and no doubt the greatest of all. I allude, of course, to the discovery of vaccination.

The vast importance of it can only be appreciated when we venture to consider for a moment what would at the present day have been the dreadful state of mortality in our own and in other countries from small-pox, if no such discovery had been made. If small-pox were as fatal now, with our population of twenty millions, as it was during the latter period of the last half century, or before vaccination, it would destroy in Great Britain alone, some 80,000 lives a-year; for with a population of about eight millions, it then yearly produced a mortality amounting to 30,000 or 40,000 deaths. Physicians may proudly point to this single discovery alone, as a victory of medicine over disease and death, unequalled in its greatness and importance by any of the wondrous discoveries that have been made through the whole past century in any of the physical arts or practical sciences. By itself alone vaccination has extended already the average sum of man's life upon earth some three or four years. Nor are the marvellously simple means by which medicine has been able to accomplish this mighty end, less remarkable than the end itself. With an almost invisible speck of matter upon the point of his lancet, the medical man can in a great measure defy one of the most fatal, and at the same time one of the most loathsome, diseases that ever afflicted the human race. For even when it spared life, we must remember how often in former times an attack of small-pox spared not the features and the very eyesight of the escaped patient. And indeed the more deeply any man considers the subject, the more will he venerate the name and discovery of JENNER, to whom was thus, as it were, entrusted the mighty and responsible office of shutting one of the great gates of human death. During the last half century, military science has, it is often averred, advanced greatly and permanently; that is, it

has invented during that period much new and dreadful machinery, and many new and horrible missiles for the destruction of man and man's works. During the same period, in the discovery of vaccination alone, medicine has invented a means far more potent to save, than the soldier has invented means potent to destroy. If modern military science can boast of the discovery of wondrous shells and shrapnells, of destructive rockets and rifles, by which the deaths of thousands of men may be easily effected—modern medical science can boast of the discovery of a small vesicle, by the multiplied contents of which, the death of thousands and tens of thousands of men may be easily prevented. For truly, the millions of money expended in the vast military stores of Woolwich and Cherbourg, lack the ability to destroy human life to any such degree as one drop of despised cow-pox matter, with its powers of multiplication in the system, has the ability to save it. The lancet of Jenner, has, during the last half century alone, saved in the world more human lives, than during the past or any other century in the history of mankind, gunpowder and the sword were ever yet successful in slaying. How often do we find the art of war described as a "noble and glorious art!" But when we consider in our hearts the relative effects of war and of medicine upon human life and human happiness, the physician may surely arrogate such a title for the art of medicine on infinitely better and higher grounds than the soldier can claim it for the art of war.

The preceding observations refer to what medicine has done during the last fifty or sixty years,—to some of the principal steps which it has made,—to some of the principal advances which it has effected during that period. And I do think that such a glance at the past, however rapid and imperfect, is calculated to fill us with cheering and bright hopes for the future. Much has been done in medical and surgical science; but no doubt much, very much more, requires to be effected, and will be effected. Let me advert for a moment to one consideration as calculated to inspire our hearts with every confidence, that a continuation of earnest research and labour on the part of the profession will be rewarded with a continuation of success in the alleviation and removal of diseases.

It is now some two hundred years since Sydenham wrote and practised in London. Consider for a moment what this father of English medicine described as the most fatal diseases in England at that time. Six of the most destructive diseases, or classes of diseases, to human life in that age were, according to Short's mortality bill, plague, ague, dysentery, scurvy, child-birth, and small-pox. These maladies, however, enjoy their fatal pre-eminence no longer. We have banished the plague, which in the olden times often destroyed in London more lives than all other maladies counted together. We have rooted out and modified the ague, so that it is rarely a fatal affection now, while every year it destroyed thousands formerly. Scurvy has almost disappeared from our mortality bills. Dysentery, though still sometimes a fatal disease, is infinitely less common, and infinitely more under medical treatment, than it was at the time of Sydenham. At that date, or in the middle of the 17th century, about 1 in every 40 or 50 women delivered in London died of child-birth or its consequences; but gradually, as medical science has advanced, that mortality has

decreased, till now not above 1 in 150 or 200 die. We have in Great Britain about 600,000 deliveries annually, and still above 3000 of the mothers perish in child-birth. If the old mortality, however, of the 17th century yet held good, and this department of practice had not greatly progressed and improved, not less than 11,000 or 12,000 maternal lives would now be lost by the present proportion of annual births;—the advancements of modern science thus effecting in this item alone a saving of the lives of 7000 or 8000 mothers every year. And as for small-pox—another of the great sources of human death in the days of Sydenham—this fearful and most destructive malady has, as we have just stated, been almost entirely destroyed by the discovery of Jenner. These most formidable and fatal diseases of Sydenham's time sustain the pre-eminence of their formidable and fatal character no longer. And may we not hope that a couple of centuries hence, the very same fact may hold true of some of those diseases that are at present most destructive and deadly in their effects upon our population? Does not the history of the past suffice to encourage within us a bold belief that perhaps in half a century or a century hence, our present most fatal diseases may, by the advancement of hygienic and medical means, be our most fatal diseases no longer? At the present day we have, according to the registrars' official returns for England and Wales, consumption producing above 50,000 deaths a-year; convulsions above 22,000 deaths; pneumonia and bronchitis above 30,000 deaths a-year; typhus fever and scarlet fever generally above 20,000 deaths each; and measles, whooping-cough, rheumatism, diarrhoea, hydrocephalus, etc., destroying human life among us in less, but still in fearful, numbers. These several diseases stand at the present time as the highest on the roll of destructive agencies that prevail in British practice. For one, I confess that I cannot but entertain an ardent belief that medical science may yet devise measures, prophylactic perhaps rather than curative, to stay the great destruction of human life prevailing amongst us from the first, for example, of these affections, phthisis. Perhaps a more advanced pathology and chemistry may yet ere long furnish us with more enlightened and practical views of pneumonia and other inflammatory disorders than we yet possess, and arm us with more sure and potent medicinal weapons and resources against them. We have, from the experience of the last few years, every reason to hope that the whole class of zymotic diseases will be greatly subdued betimes in intensity and violence, when the investigation of the physical causes predisposing to them, or even actually exciting them, is more fully expiscated. If medicine has devised means to arrest the ravages of small-pox, may it not yet devise some means also, by inoculation or otherwise, to arrest the ravages of scarlet fever and measles, of whooping-cough, of typhus fever, and perhaps of the whole class of non-recurrent diseases? And even if we fail to arrest them, we may possibly find out for the varying animal poisons producing these diseases, antidotes as certain as quinine is against the poison of marsh fever. Let us at least not sit indolently down and argue ourselves into the belief that it is impossible to attain such results. The conquest of small-pox seemed to our forefathers a hundred years ago as impossible as the conquest of these maladies can look to any one now; and yet we all know that the subjugation of small-pox was effected by the genius of

one man and the devotion of one mind to its accomplishment. Some time before Jenner turned his attention to the subject, the learned and accomplished Dr Mead—the first London physician of his day—wrote of the utter hopelessness of the very idea of battling with and vanquishing such a formidable enemy to human life and happiness as small-pox. He speaks of the possibility of a “specific antidote being found against the contagious poison” of small-pox—that is, an antidote “by which it may be so thoroughly destroyed, that though it had been received into the body, it may not produce the disease,” as an idea as wild and chimerical as that of alchemy; and one, in his opinion, outraging “the principles and elements of things that are so certain and so well established by the permanent laws of nature.”¹ These disheartening opinions of Dr Mead regarding the hopelessness of ever gaining a prophylactic for small-pox, were published in 1747. Before, however, fifty years had elapsed, Jenner had both discovered, and successfully adapted to practice, the great prophylactic measure that has rendered his name imperishable in the annals of the human race. And thus the happy results of Jenner’s labours,—besides their own intrinsic and inestimable worth,—descend to us stamped with a precious lesson from him of hope and perseverance under alleged impossibilities; for these results preach loudly to the profession in all time to come, that we should never permit any apparent improbabilities to prevent us from going always onwards in earnest search for possible means of conquering and curing diseases even of the most formidable and fatal kind.

In conclusion, let me add one word more. I have hitherto spoken of associations of the profession, like that of the Medico-Chirurgical Society, as principally calculated to advance medical observation amongst us, and to promote the general extension of medical science. There is, however, another high and important advantage belonging to such associations as those formed by this Society,—another benefit flowing from their construction. For such associations are not only destined to spread professional zeal and information among their constituent members; they are destined also to promote professional goodwill and genuine brotherhood amongst them. They are intended to cultivate the heart, as well as to cultivate the head;—to increase and deepen our feeling of professional fraternity and kindness, as well as increase and extend our stores of professional acquirements and knowledge. And during the time that I may have the pleasure and the honour of occupying the Chair to which you have elected me, I shall ever endeavour to use my influence in it, so that while every freedom is given to professional debate, there shall, if possible, be nothing uttered that shall unnecessarily hurt the feelings of any member of the profession, present or absent. And I feel sure that in endeavouring to attain this end I shall ever meet with your hearty concurrence and aid.

¹ See his *Medical Works*, vol. ii. p. 131 (Edit. of 1763).



