

THE  
Chruston Speech.\*

ON THE

PROGRESS OF THE ART OF MEDICINE.

*Delivered in the Chapel of Caius College, Cambridge,*

BY

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By the invitation of the Master and Fellows of this house, and in accordance with its ancient custom, I have the honour to-day to address you on the progress of the Art of Medicine. Nor can I consider this a light duty, the mere accomplishment of an annual task or the fulfilment of an indifferent usage. To look back on the past in order to measure our goings is as much a condition of progress as to gather from the signs of the future the direction in which we shall move. In every department of knowledge it is a wholesome thing to reckon honestly with ourselves whether we have been loyal to our work and have carried forward the lamp of knowledge, or whether, in otiose counsels or in actual indifference, we have proved faithless to our charge. It is the pride of modern Medicine that she can look boldly at the past, and, conscious of her honour, can welcome her anniversaries with a good account of her stewardship.

We have much reason, indeed, to study the past as a means of wholesome and effectual progress. In human knowledge itself, as well as in the objects of our study, we see that growth consists, not in a mere translation of parts, nor in a mere addition of new kingdoms of phenomena, but that it consists rather in an unfolding of parts, in an evolution of the new from the old; so that the old is always contained in the new, and the new is never more than a revelation of that which was formerly hidden. To know with the knowledge of the day alone is therefore no more than the knowledge of the human anatomist who is ignorant of comparative anatomy and of embryology, who sits on the bough of the tree and knows nothing of the tree itself nor of the garden where it is planted. Such partial knowledge as this is but blind work after all. A sound and fruitful science cannot be reared upon the current ideas of any single generation, but must be rooted and grounded in the past, and must be fed with all its varied experience, so that it may take no accidental pattern, but may slowly grow up in unity with the whole scheme of nature. It is much to be desired that some conception of the development of scientific opinion were impressed upon our own generation. We might then hope to see men no longer reviving dead theories, nor running back upon paths which have led to nothing, but rather making an intelligent use of those methods only which have proved fruitful, and by which alone we shall attain to any permanent results.

Every year since the modern regeneration of our art and of the sciences upon which it is founded, we have seen our calling advance in true knowledge, and have seen it gain therefore a higher place in the business of the world. No longer a mere craft based in part upon superstitions and fears, and kept up in part by the artificial aids of routine, medicine is now the art of arts—the art which bends all the sciences to the cure or the relief of human suffering. It can never be forgotten that the true and only end of medicine is to diminish bodily suffering and bodily decay. If we lose sight of that prime purpose, we are profitless labourers, though we move mountains of ignorance, describe every minutest tissue in the body, and shed light upon every vibration of function. Nay, the minute study of human pain, without consciousness of any power to assuage, would be a horrible and even a degrading work, unworthy of my eulogy and of your attention. Is it true, then, as many, even many physicians, say, that while we are vastly increasing our knowledge of anatomy and physiology in

health and disease, we are still as far as ever from the successful treatment of maladies; nay, that we are even farther from this than our fathers, who, by the bold use of some rough remedies, managed on occasion to strangle or defeat the ills with which they had to deal? Is it true that we are destroying any art of medicine by proving that means formerly used are no means, and that cures formerly recorded were no cures; while we at the same time offer no alternative treatment of our own, but rather learn to sit at the bedside as curious and helpless spectators? If it be granted that ancient modes of treatment were often injurious rather than helpful, then surely we are relieving our patients so far as we protect them at least from abuse. *Non parum est scire quod nescias.* But I am proud to say we can do more than this: and, did time serve me, I could display to you a vast array of therapeutical means, means discovered and directed by the modern spirit of thoroughness and accuracy, which, when surveyed at once, might not only confound the sceptic, but surprise even the practical physician. Much, however, remains to be done, and we must still anxiously ask ourselves whether we are working in the right way, and if our methods are fruitful.

As it is impossible for me in this place to enter into the detail necessary to show how much progress has been made in positive therapeutics, I shall rather set before you the main lines along which we seem to be moving, and the kind of success which seems to be before us, or even within our grasp. I shall show, first, that our theories of the nature of disease are undergoing a great change, a change which must wholly transform our notions of dealing with it; secondly, that the new study of pathology or morbid physiology, while revealing to us the modes of disease in the body, reveals likewise the ways in which we may meet or anticipate it; thirdly, that chemical inquiry is now finding its way into many of the remoter secrets of function, and is likely before long to establish some laws of molecular constitution, which will enable us to classify known remedies and to explain and calculate their actions. We may thus ultimately be enabled even to construct some sort of canon for the discovery and adaptation of remedies, an achievement which would at once raise medicine into the first rank of intellectual pursuits.

Let us consider what important theories have been held concerning the nature of disease, and what theory is now prevailing or likely to prevail.

It is a common assertion, thoughtlessly repeated even by those who know better, that what we need in medicine is practical knowledge rather than accurate theory; that medical reasoning may be very bad, but medical practice may be very good. That there is some truth in this antithesis I admit; but we little suspect how largely theory enters into the practice of all of us, and how largely our practice is based upon such theory, and modified by it for good or for evil. If this be so, then the rectification of our theories assumes an importance we scarcely suspect; and we shall do well to see which way we are looking in theory, if we wish to know what results we are attaining in practice. The late Master of Trinity says: "Art, as an empirical form or a technical practice, of some sort, is necessarily, in almost every case, anterior to the corresponding science"; and as man finds himself called from the earliest times to the succour of his afflicted fellows, so, as soon as he frees himself from mere idolatry and begins to think, he must make out some provisional principles upon which he himself acts and of which he can give some account to others. Medicine must profess to depend upon a knowledge of disease, and useful medicine must depend upon such knowledge being approximately true. Nothing could have been more promising than the earliest important attempt of this kind in the west. Hippocrates and the Greek school dealt with the question in the simple, clear-eyed manner so characteristic of that wonderful people.\* The Hippocratic school believed that disease consisted in the exquisite combination of four humours. They did not hold the common coarse humoral pathology of which I shall presently speak; they did not contemplate the admixture of four liquids or juices, but rather the perfect balance and union of four "substances" or hypostases, and in the *κράσις* or *δυσκράσια*, of which disease was sup-

\* It seemed scarcely necessary to republish this speech in full. Much of the illustrative matter is withdrawn, and other parts are shortened, with the effect, I fear, of a certain abruptness in many places, for which I must ask the reader's consideration.

\* I may refer for further evidence on this subject to my essays on the Medicine of the Greeks in the "Med.-Chir. Review" for 1866, which I hope soon to continue.

† In this connexion *κράσις* means combination, and is opposed to *μίξις*, or admixture.

posed to consist. Without much confusion of thought, we may venture to compare this theory with the modern chemical doctrine of the four elements, hydrogen, oxygen, carbon, and nitrogen. This conception, at any rate, was clear in their minds—the conception of a perfectly harmonious combination of constituent elements, and not a mere intermingling of fluxes and juices.

When Greece fell, a great darkness gathered over medicine and over the kindred sciences; a darkness which did not lift until the commencement of our own century.

After Hippocrates came the Græco-Latin and the Latin schools; of whom the chief was Galen—*Galenus, medicorum post Hippocratem princeps, philosophus, grammaticus*. An elegant and very learned scholar, a writer also of great variety and prolixity, Galen had little of the clear-eyed, sober Hippocratean character; he was also *philosophus et grammaticus*,\* in which two words lies the secret of the mischief of which he was the innocent cause. He cast a cloud of transcendent idealism over the early Greek simplicity, and supplied a tradition to his successors which they followed but too readily. Loved not wisely but too well by the Latin and Arabian schools, Galen's works, like those of Aristotle, furnished but the groundwork of that scholastic method which was so barren of all good.† The writers of the commentatorial period (as it has been called by Whewell) were full of ingenuity and subtlety, of verbal inventions and connexions, and yet were wholly devoid even of the germs of real knowledge. As Dryden says of Aristotle—

"The longest tyranny that ever swayed  
Was that wherein our ancestors betrayed  
Their freeborn reason to the Stagyrite,  
And made his torch a universal light."

This may be said as well of the blind worship of Galen. For the physicians of the lower empire a name and a formula were sufficient; to many after-generations the giving of names seemed enough to establish distinct existences; and to decide upon the definition of a thing seemed to be equivalent to determining its nature and characteristics. Ἀτέλη σοφίας κάρπον δρέποντες, reaping what was indeed the barren fruit of sophistry, their labours seemed to have no benefit whatever for the human race.

"Sic observatio crevit  
Ex atavis quondam male cepta; deinde secutis  
Tradita temporibus, serisque nepotibus aucta."

During these centuries a coarse humoral pathology gained great way, and it is still, as Virchow says,‡ the pathology to which we all cling in our hearts. It is the pathology of the nursery, the pathology of the drawing-room, and the pathology of the Church. It is the pathology of many oriental nations, and it is the pathology of the Jews. "The life of the body is in the blood," says Moses; and all diseases are therefore to be referred to impurities in the blood. Thus embodied in the Bible and in the Church, and passing, on the other hand, by way of Galen and Celsus, into classical literature—which two streams joined during the middle ages into one,—it is no matter for surprise that we find enormous difficulty in uprooting it now. *Acridities*—*acrimonie morbi* poisoning the blood—are warred against, expelled, or eliminated, as being the disease itself. By the side of this humoral school, again, there has been a strong spiritualistic pathology, also oriental, and which now is the pathology of the Chinese and Arabians. In this pathology, of which the breath of life is the key-note—the infused breath which informs the dead clay,—life is said to be due to indwelling spirits, or creative essences, and diseases therefore to devilish agencies or malignant exhalations. Now, what does modern pathology say to this? Modern pathology has to answer that disease is no real existence or separable entity, to be studied apart from the body—that it is not an evil spirit, a chemical substance, a humour or poison in the blood,§ nor even a parasitic fungus; but that it is the living body itself in a peculiar state. We regard disease simply as a mode of life, as a process or a series of phenomena, which differ only in rate or in order from the healthy series. Modern pathology tells us that, when we

have to treat disease, we have not to neutralise or eliminate humours, nor to expel evil spirits, but to disencumber, as far as we can, that regulating power which the body by nature has to so wonderful a degree. Like all systems of force, the human body, when disturbed, tends to recover equilibrium, and it is for modern medicine to show how this tendency may be detected and set free to act without hindrance. The modern physician—*minister, non magister naturæ*—says: "The body and its functions are thrown off equilibrium, and it is not for me to expel or counteract this or the other, but to put the body in such a position that it may most quickly recover its own balance." Need I stay to point out, by such instances as the modern way of regarding inflammation, how far this is not only a revolution in theory, but equally a revolution in practice?

My second postulate is, that the rapid advance of physiology, normal and morbid, aids us very greatly in this reform. Take for example the case of valvular disease of the heart. Hypertrophy of the left ventricle in aortic disease and of the right ventricle in mitral disease is now no longer feared, but rather welcomed, by the physician, who has learned that these hypertrophies are compensatory, and tend to the restoration of equilibrium. An instance equally remarkable, but taken from a different set of events, is seen in the recognition of fever as a loss of equilibrium in the sense of molecular disintegration—a process which we measure by the correlative disturbance of temperature, or by analysis of the excretions. The modern physician, who is no longer bent upon the elimination of morbid poisons from the blood, will no longer treat scarlet fever, let us say, by promoting the action of the skin\* and calling upon the evil in the shape of the rash, but he will deliberately prop up the equilibrium mobile on the side to which it leans, and, by the vigorous and repeated application of cold water, he will help the regulating action of the system which is unequal to the disturbance. In other cases the application of the principle of restoring balance may be a matter of hesitation, although the principle itself remains unchanged. In disease of the kidney, for example, it may be a matter for serious consideration whether, in a given case, we shall endeavour to set up an artificial balance by drawing off the urinary products by other channels, or whether we shall attempt to restore the natural balance by a judicious use of diuretics. It were endless to multiply examples like these; for, if the new principle be a right principle, we shall find its application everywhere. I will take one more instance from the nervous system. Although in a complex animal like man the origin of many disorders may lie without the nervous system, yet no disorder can be independent of this system, which in man is all-pervading and intimately engaged in every function. It seems that the nervous system is, to a great extent at least, the expression of the regulating power of the body; and that by means of it alone can regulation be sustained in so complex a system.† By strong impressions upon the nervous system, then, we may largely influence the balance of function, setting up disturbance in the healthy body, or counterbalancing disturbance in the morbid body. Upon this principle the modern physician applies those blisters, for example, or other local means which were used by our predecessors, also on theoretical grounds, but on grounds which are now seen to be indefensible.

It is most important for us, therefore, to learn the directions in which lie the lines of disturbance in the nervous system. The strange results which Brown-Séquard has obtained by cutting the sciatic nerve, and the apparent reciprocity between this nerve and the trigeminal, not in the matter of convulsion only, but also of nutrition, are an earnest of what is to be done in this way of inquiry. Clinical study leads us to anticipate that there are many parts which, although distant from one another, are nevertheless balanced together. We see this constantly, for instance, in the effects of a purge upon the encephalon,‡ and of uterine disorders upon the nerves of the head and face and of the left infra-mammary region.

Space forbids me, in the third place, to discuss those brilliant anticipations of therapeutical progress which seem to

\* The reader is probably aware that "*grammaticus*" does not mean "grammarian," but may perhaps be best translated as "man of letters."

† The literary renaissance of the thirteenth and sixteenth centuries, which brought up new editions of "authorities," acted in this way even as a bar to the advancement of scientific knowledge.

‡ Tageblatt d. r. Versammlung in Innsbruck, p. 187. 1869.

§ I have combated the prevalent idea of a morbid poison being syphilis in an article on Syphilitic Diseases of the Brain in "St. George's Hospital Reports," vol. iii.

\* That is, not for the sake of elimination, upon which *hypothesis* it was formerly done; but upon the modern hypothesis of abstracting heat by evaporation.

† As I have written more at length on this point in an article on Temperature in the July number of the "Medico-Chirurgical Review," I omit much that was written here.

‡ Purging was formerly, of course, resorted to on the theoretical grounds of elimination.

promise so much in the immediate future.\* The researches of Brown and Fraser and of Broadbent seem to indicate that a vast field of discovery is lying scarcely hidden at our feet. The administration of drugs has been so simplified and refined that we are now approaching, for the first time, to an accurate knowledge of their effects upon the organism. The observers I have named, with others like them, may now hope to establish, and indeed are establishing, some constant relations of molecular constitution between the higher chemical groups and certain corresponding bodily tissues. If in this way we learn to classify agents according to their affinities within the organism, and according to their power of binding or releasing force in particular tissues, we shall feel that the scales are indeed falling from our eyes.

We are justified, then, in looking confidently to a future of great progress in medicine. Freed from the paternal oppression of narrow and conflicting authorities, gathered into unity with the State as one arm of her power, and enabled by her own representatives to make her own needs felt and to govern herself for her own best interests, Medicine will take a new place in the State, and make good her claim to the service of the best intellects of the age.† Let it not, however, be supposed that, in rejoicing with the hope of this great progress of medicine, I am rejoicing in the mere supremacy of medicine as a profession, or in a mere investment of the profession with external honours. "For that which tends only to profit or glory is but as the golden ball thrown before Atalanta, which while she goeth aside and stoopeth to pick up she hindreth the race." No one can care less than I care for titular precedence as such, or for the outer decorations of greatness. "Ἀλλὰ τιμὴ μὲν, ἔφη, ἐάνπερ ἐξεργάζωνται ἐπὶ δ' ἑκάστος ὥρμηκε, πᾶσιν αὐτοῖς ἔσται. Τῆς δὲ τοῦ ἔντος θέας, οἷαν ἡδονὴν ἔχει, ἀδύνατον ἄλλω γεγεῖσθαι πλὴν τῆς φιλοσοφίας."‡ I am glad to see our profession rising to higher honour, because I hope and believe that this advance is the advancement of free inquiry, and of a patient, truth-loving spirit, untrammelled by prescription and heedless of privilege of rank or creed. The time seems to come nearer and nearer when men, distrusting the unequal mirrors of their own minds, will rise to that real and lofty faith which consists in the trust and free acceptance of truth alone, believing that in the single contemplation of "the one great and common world," and in quick acknowledgment of its laws as the highest rule, we can be led into no evil, but rather by it alone, if at all, we shall reach to happiness and perfection. "Ἡγουμένης δὴ ἀληθείας, οὐκ ἂν ποτε, οἶμαι, φάμεν ἀντὶ ἁπορίας κακῶν ἀκολουθήσαι. Πῶς γάρ."

\* The establishment of that excellent journal, "The Practitioner," under the able management of Dr. Anstie, is very significant of advance in therapeutics.

† Our hopes have fallen since I wrote this sentence, and the course of the Medical Bill will be another instance of that lack of statesmanship which seems to be the bane of so much of recent legislation. We have two evils crying for remedy. The first is, that we are represented by a Council which is formed on a false and narrow basis, which is therefore impotent in action and feeble in debate. The second is, that admissions to the profession are made irregularly, and after divers and insufficient standards. To meet the latter evil, the Bill proposes to leave all examining boards as they are, and to add to the confusion by establishing others of less prestige. To meet the former evil, the Medical Council, instead of being remodeled on a representative basis, is to have its wings clipped, and be thus reduced to a more pitiable state than ever. There is no reason for directly representing the old guilds which does not apply with greater force to the large medical schools. That the corporations exist for the profession is a new and curious truth as yet to be discovered both in Lincoln's-inn and the Temple, as well as in Lincoln's-inn-fields. Meanwhile we have some compensation in the comic attitude both of the legal and medical corporations, who, while loudly protesting how great are the benefits they have showered on their respective professions, yet manage with admirable dexterity to elude every chance of falling into the hands of their affectionate children. As bewildered as Don Basile, we are tempted to cry—

"Qui diable est-ce donc qu'on trompe ici?  
Tout le monde est dans le secret!"

On the other hand, when we think of the individual members of the Council, how able and excellent many of them are, and how valuable their reputation is to us all, we regret the more deeply, for their sakes as well as our own, to see them placed in so false a position.

‡ Plato. Rep. ix., 582.

## PRACTICAL SURGERY.

By OLIVER PEMBERTON,

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### I.

*Excision of Knee. Age for operation; illustrations. Case in which Gangrene followed. Treatment of Compound Fracture of the Patella by Excision. Treatment of the same accident without operation.*

ELEVEN years ago,\* I laid before the profession some observations on the subject of excision of the knee-joint. They excited at the time, and since, a good deal of comment, more especially in regard to the question of the want of growth in the limb submitted to operation in the young subject. I do not change now the opinion I then expressed, to the effect that this want of growth rendered the limb in after-life useless, and that hence the proceeding was not to be recommended in children. In making this avowal, I expose myself again to the friendly dissection of Sir Wm. Fergusson,† who congratulates his patient on the possession of a foot of "flesh and blood" in preference to an "artificial appendage," even in the extreme case of the natural support being actually above the level of the sound knee. I must note also the fact that on the 29th of January in this present year Mr. Paget excised the knee-joint of a lad aged eight in St. Bartholomew's Hospital; and that another case, of a boy whose knee had been excised by him three years previously, had come under care again on account of disease in the opposite hip—the result as regarded the knee having, it is said, been very successful, till lately, when flexion had taken place.‡

I should be glad if, by again drawing attention to this particular question of "want of growth," I should be successful in eliciting Mr. Paget's views. My own convictions on this matter were recently strongly revived by examining a most excellent instance of the success of the mere operation at the hands of Mr. Vincent Jackson, of Wolverhampton.

The case, that of a girl aged twelve, was exhibited at a recent meeting of the Pathological Section of our Medical Association here. Nine months had elapsed since the operation; and the cast taken of the united bones, on the child leaving the hospital, displayed a limb completely straight. The condition of the patient when shown was that the supposed firm bony union has yielded, giving rise to considerable flexion in the limb.

Apart from the want of subsequent growth, I myself entertain a very strong opinion that we are not justified in relying on the permanence of the union between the sawn extremities of the bones in children as we would in adults. Some time ago, and before I had abandoned the operation in early life, I excised the knee-joint of a boy aged ten. The union was everything to be desired, and he was discharged to a distance, and lost sight of. When seen within two years of the operation, the flexion was so considerable that he could not put the foot to the ground, and ended by going about on a peg leg, with his knee at a right angle carried behind him on the shelf. The union was bony enough then.

The truth is that it takes a great deal longer in children to obtain an absolutely immovable union than it does in adults; and it is necessary, in order to guard against subsequent yielding, to insist on the patient's wearing a leather support, strengthened with light ribs of steel, for at least twelve months after the excision.

But I pass on with no little satisfaction to make a few remarks on the operation in adult life, prefixing the expression of my belief that, after twenty years of trial, between the ages of fifteen and thirty-five, the operation of excision of the knee, as revived by Sir William Fergusson, in suit-

\* On Excision of the Knee-joint, especially in regard to the want of subsequent Development and Growth in the Young Subject. London: T. Ri chards. 1859.

† Lectures on the Progress of Anatomy and Surgery. London, 1867. pp. 139, 143.

‡ Hospital Reports, Brit. Med. Jour., Feb. 5th, 1870, p. 132.

**SYPHILIS ALLEGED TO BE CONVEYED BY VACCINATION.**—The *Lyon Médical* of February, 1870, states that two soldiers, who had never had syphilis, were revaccinated some months ago, when they had joined their regiment, as is generally the custom. The vesicle was long in healing, it turned into a syphilitic chancre, and secondary as well as tertiary symptoms followed. The editor of the journal takes occasion to deprecate Jenner, and warmly recommends heifer vaccination.