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THE HARVEIAN ORATION ON THE PROGRESS OF THERAPEUTICS.

DELIVERED AT

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I KNOW I shall be carrying out in spirit the intention of this oration's founder, when I ask you to join me to-day in reviewing the contemporary progress of therapeutics. While science is our privilege, art is our duty, and, quite as much as science, is capable of advance by that method of direct experiment, to advocate which Harvey bids me stand here. Now is a fitting time to take such a review diligently and often, for I am sure that this our art of healing is passing through a most trying crisis, which will decide the direction and place of its onward march in a most sovereign manner. Let our motto be *Vigilemus*, or we shall stumble and block the road.

This crisis I have elsewhere described by saying that medicine is now entering upon a biological phase. By this I mean that our practice is becoming yearly more and more influenced by that idea of disease which paints it as a mode of living, as an imperfect form of undeveloped vitality, as a loss of something present in health. Is this new? Is it true?

It is new; it is not implied in former theories of therapeutics. I must ask you to bear a little with the unpopular subject of medical history; for the advocates of various principles of healing have made their differences so strongly felt, that their important point of resemblance is somewhat overshadowed. And their point of resemblance is that in which they differ from the newer medicine of to-day.

The Athenian physicians were the first to recognise that health and sickness obeyed any universal law,* and not the arbitrary wills of good or bad powers. They considered that the important point in disease was the *excess of some constituent* of the body—of phlegm in winter, of blood in spring, of yellow bile in summer, of black bile in autumn. This view still survives in the practice of *elimination*, and in the phrases of "reducing the fever", "clearing out the liver", "getting rid of the bile", and the like, so often in the mouths of patients.

Galen brought into pathology the notion of Force, as distinct from its object. To Plato's Life of Nutrition, Life of Animal Motion, Life of Volition, he added the idea of the foreign force of Disease. Diseases were foreign forces, foes to the native; and the duty of a physician lay in opposing them (*ἐναντιώσεις*). Remedies were to be sought which in a healthy man would produce abnormal symptoms contrary to those of the disease. Nobody can deny that this *cure by contraries* holds its ground bravely, and will do so till we find sleeplessness not to be alleviated by narcotics, constipation not to yield to purgatives.

Its permanence has been in a great measure due to its openness to accept modifications and reforms. One of the most important of these is an extension of Hippocrates' suggestion that "diseases naturally contain their own cure" (*νόσων φύσις ἰσχύει*) into Sydenham's designation of their phenomena as an effort of Nature (*Natura conamen*). This theory has been so salutary in promoting a milder and better treatment of acute ailments, that it too still influences deeply our pathology and therapeutics.

Neutralisation, by what may be called antidotes, is the application of chemistry to the cure by contraries. During a given disease there is found in the body a substance differing from what is found in health.

United with certain drugs, it forms a third neutral and harmless substance. We will give those drugs. If the urine be over-acid, we will give alkalis; if it be alkaline, we will give acids. It seems as if contagious fevers were set in action by a ferment in the blood, so we will administer, in as large doses as we dare, chemicals which decompose ferments. Though sometimes leading us into blunders, this idea has certainly taught modes of treatment which relieve illness; so that it has advanced along with advancing chemistry from the time of our famous co-fellow, Dr. Thomas Willis,* author of the *Pharmaceutice Rationalis*, up to the present time. And seeing that our generation of fellows has contributed a Dr. Prout, a Dr. Bence Jones, a Dr. Garrod, and many others, to the labourers in the cause, we cannot be surprised that valuable therapeutical results have arisen.

Counterirritation† is a principle of treatment which owes its prevalent application to the study of morbid anatomy. The idea is, by exciting artificial diseased action in parts under our control, to divert the diseased actions from a less accessible or more hazardous localisation. We see before us the fact that a spontaneously generated secondary disease is often rapidly followed by the cessation of a primary one, whether milder or more serious; and we infer with reason that the same result will be found if the secondary disease be the consequence of a drug. This therapeutic theory is obviously made more universally applicable by an exact determination of the parts affected; and, therefore, with the advance of morbid anatomy, has more influenced our practice. That this advance will continue, we have the guarantee of the devotion of our own Johnson, and Murchison, and Ogle, and Quain, and Sibson.

All rational cures seem to have resolved themselves into these five; namely, the Cures by Elimination, by Opposition of Contraries, by Assisting Nature, by Neutralisation, by Counterirritation. All except mere reactionary speculators have, till lately, followed the advances here implied. Examine each, and you will see that they are all agreed in one feeling as to the nature of disease; namely, that there is therein added to the animal frame something which needs to be reduced, or opposed, or assisted, or neutralised, or counterirritated. Now it seems to me that the tendency of the medicine of to-day is to take an essentially opposite view. Daily stronger and stronger an impression is being borne in upon the practitioner's mind, as expressed in his acts, that disease is something less, not something more, than life. Under the light of advancing physiology, morbid substances and processes appear examples of arrested development, each one the more as the more intimate is our acquaintance with it. The end and aim of happy treatment is, therefore, essentially an addition, an endeavour, to retain, to restore, to develop, into fuller life those identical morbid substances and processes which have hitherto been uniformly condemned to expulsion. When we are sick—

"Tis life of which our limbs are scant;
'Tis life, more life, for which we pant;
More life, and fuller, that we want."

To answer the question as to novelty in a more concrete form, take the yet unfinished collection of monographs on specified diseases which we are owing to the labours of our accomplished fellow, Dr. Reynolds—the first and second volumes of the *System of Medicine*. Compare each subject with its prototype in the *Cyclopædia of Practical Medicine*, published thirty-five years ago; and in no single essay will you find the treatment recently recommended to be more evacuant than that of old, or more antipathic, or more counterirritant. In a few instances it remains unaltered; but in the most you read of medicines advised "to support the strength of the patient" in diseases where the writer's teacher would have used the most active debilitants with the avowed purpose of weakening the disease.

The volumes are in the hands of all, and I will not sit in the seat of the reviewer by reciting examples. We have all seen the day when

* Though Willis's reputation was mainly connected with Oxford, he was admitted an honorary fellow of our College in 1664.

† Dr. Parry calls it the Cure of Disease by "Conversion". But that word seems to imply change of nature rather than change of place, whereas in most of the examples of the influence of this principle the curative morbid process is either identical with or closely related to the ailment.

* Νόσος πάντα κρατύνει.—Hippocrates, *De Geniturâ*, I. 1.

hospital-physicians gave five grains of calomel three times a day to cure acute rheumatism, mercurials and purgatives in enteric fevers, tartar emetic in full doses and venesection stroke upon stroke in pneumonia; when they narcotised with monstrous doses of opium the brain of a raving drunkard, exhausted with artificial sweats the moist skin of a gouty man, or turned his urine alkaline with soda and potash, and scalped with blisters the acute maniac and the hydrocephalic child. Were they not right according to the principles of Elimination, Contraria Contrariis, or Assisting Nature, or Neutralisation, or Counter-irritation? Go round the wards now, and you will find these extremes at any rate as nearly extinct as flint-locks or duelling. Indeed, the extinction has been in some instances too rapid; physicians have so hastened to cry *ἔφυγον κἀκον*, that they have forgotten to add *ἔβρον ἀμείνον*; and, unready with a substitute, have displaced that which was certainly better than a vague expectancy.

If you look down the lists of new articles of *materia medica*, brought into common use of late, you will see that none are of a nature to augment destructive metamorphosis. Cod-liver oil, hypophosphite of lime, phosphates of iron, manganese, soda and potash, ox-gall, pepsine, pancreatine, are familiar instances of those whose intention is to form a basis of new cell-growth, thus being directly constructive.

The surgeon, too, when the skin is lost or wounded, builds up as good a restoration, or imitation, as he can, with collodion, or some other impermeable substance, to shield the inside tissues, instead of tearing them open to the bitter air, as in the horrible operation of dressing and cleaning. Again, with the expressed aim of limiting the resolution into their elements of diseased tissues, there are largely used anticalcotics, such as carbolic acid, the subsulphites of lime, soda, and ammonia, while several sulpho-carbolates, chlorine, etc., are administered internally. On the other hand, permanganates, whose oxidising action is their distinguishing character, are given only when it is held wise to skip the dangers of the first stages of catalysis by hurrying them on. I do not know that I can cite alcohol as a new remedy, seeing it came into use so soon after the Deluge; but at all events our notions concerning it are new. Our fathers looked upon it as a fuel to life's lamp, augmenting heat, secretion, power, and vital action, and consumption in general. We find it to be in reality a damper to the flame. It has been used as a medicine, and as a good friend to poor humanity, throughout all these centuries; but now in a somewhat different class of cases, and with a better result, I trust. Though not a repairer of the waste, it is a conservator, and has thereby its own, though lesser, value. This change of use, without change of tool, has befallen many other old established remedies, such as iron, digitalis, quinia, arsenic, warmth, oxygen.

If you go beyond *materia medica* into pharmacy, you will notice that the energy exhibited by the deviser of new forms of old favourites has turned itself to constructive drugs in the proportion of nearly three to one of destructives. This shows the direction of prescribers' requirements.

There is an interesting class of substances of old called "alteratives", which may probably have light thrown upon them by the new movement of therapeutic thought. These agents are not in any wise eliminative, nor do they arrest elimination; in moderate doses they cause no symptom either opposed to, or like, the diseases they cure; their effects do not resemble the efforts of nature during sickness; and any toxic action they may exert is not enough to counteract anything, so that I do not see how their use is to be reconciled to any of the older therapeutic theories. Typical instances of this class are the iodides and bromides, of which the tonnage consumed is monthly increasing. Their sole effect in medicinal doses seems to be cure. Either nothing happens, or certain failing functions are restored to health without any morbid tissue being destroyed. The diseases to which they are applicable are so various that it appears at first impossible to find any common point at which the successful physis has touched them all. The connection is truly not obvious between syphilis, aneurism, epilepsy, neuralgia, gout, ague, hysteria, lead-poison, and acute hydrocephalus. Yet in certain cases of all such ailments this class of drugs is useful; and we needs must discover wherein the kinship lies, or we can never attain to a rational use of the remedy. It has struck me—and indeed I usually act upon the thought—that they are related to one another in virtue of an imperfect vitality of the white fibrous tissues with which bones and trunk-nerves are sheathed. When a periosteum is tender from the syphilitic poison, iodide of potassium acts like a charm, while its influence on a chancre or sore-throat is scarce perceptible. The same may be observed in rheumatism and in neuralgia. The bromide prevents with considerable certainty epileptic attacks which arise from injuries and jars to the pericranium; with less certainty, obscure cases whose cause you cannot trace, and very rarely congenital or hereditary instances of the disease. It heals the tissue, not the epilepsy. Deep-seated gout

racking the tendons is relieved by the iodide, but gouty urine and gouty indigestion are untouched. Lead-poisoning is also cured by the iodide, when it is given in painful or paralytic conditions of the limbs; but colic is not benefited. The same drug has rescued from death in a wonderful way cases of acute hydrocephalus where the membranes of the brain were affected, but has apparently no influence when the cerebral substance is inflamed. I should be disposed, therefore, to assign a neutral pathology to those cases of hysteria and of ague which I read have been relieved by these salts, for I suppose they will renew to health the sheaths of the nerves as well as the sheaths of the tendons and bones.

That which has above all things contributed to change of practice, is the gradual course of change in our ideas of inflammation. The last great teacher who has published a monograph on the subject—Dr. Alison—depicts it as "a local increase of a vital property" (*Library of Practical Medicine*, vol. i, p. 64), and urges the use of blood-letting to subdue it, on the express ground that the evacuation "weakens the heart's action" (*ibid.*, p. 98), to which weakening influence, indeed, he ascribes the power of all other antiphlogistics whatsoever. Monographs on inflammation have not been written of late years; but morbid anatomists, chemists, physiologists, and clinical teachers, of all nations and tongues, unite in speaking of it as "a perversion of nutrition". And to each one in his own department the perversion displays itself as in the direction of incompleteness. The anatomist sees it in the *premature expulsion* of new-born germinal matter which should have budded into tissues, but which now at best becomes a deformed scar, and more usually dies off as pus. The chemist points out the *defective oxygenation* which causes lithate of ammonia, uric acid, or oxalates, to appear in the urine, or an excess of fibrine in the blood. Inflammation is a cooling, not a kindling, of the furnace in respect of chemical power. The physiologist discovers the swelling, redness, and heat, of inflamed parts to be due to a *loss of elasticity in the smaller arteries*. He regrets his inability at present to explain the general rise of temperature; but as that sometimes occurs after death, he does not think it an evidence of increased life. The practitioner at the bedside, casting about among the means at his command for something to cut short inflammation with, finds that the nearest approach to such an end lies in replacing the loss of elasticity by pressure, by cold, by astringents, or by spurring up the contractile arteries to exertion with nerverine drugs. Among the latter he reports well of quinine, and, finding that by its use the fever-heat is quickly lowered, he looks upon that high temperature as arising from diminished nervous control.

Morbid anatomists have also done much to shake the fixedness of our methods of healing, by finding evidence to show that what appear superficially different forms of morbid products are in reality different grades. That which distinguishes them is a higher or lower degree of vitality, a more or less of the characters of living flesh. As an instance, I may cite Gerber's classification of tubercle into (1) granular or unorganised, (2) cytoblastic, (3) cellular, (4) filamentous. Each form is a little higher than the other in the scale of resemblance to tissue.

This is no guide to prognosis, for the more highly organised growths may be the most destructive to neighbouring parts—indeed, in the case of cancer it would seem as if the danger were directly in ratio to the organisation—but it can hardly fail to influence treatment.

Another powerful agitator of therapeutic aims is the distinction made between disease and its cause, arising out of the attention paid to morbid germs. I think it wise at present to use the word germ in its widest sense, as meaning either a fragment of organic matter in a state of decomposition, or a fragment capable of resuming vital characters, or a separate individual. The investigation is being carried on by our co-fellows, Dr. Beale and Dr. Burdon Sanderson, with the aid of the highest powers of mind and microscope; and the facts elicited are too widely known to make needful more than allusion. But they all combine in leading us to draw a distinct line between the treatment of the disease and the treatment of the cause, between the management of the wound and of the bullet, which our forefathers were apt to pass over in their views of enthetic disorders. Whatever be the etiology of the germ, it is clear that the condition which results from it can be looked upon only as an arrest by obstruction in the life of the tissues where it is inserted.

The becoming conscious of these invisible angels of death, hourly drifting around us, reminds one of the opening of that mythical box of evils with which Horace has made us familiar; yet here, too, there is a hopeful germ at the bottom. We have to deal with (let us say) an unhealthy stagnant ulcer; we strip out a bit of clean skin, not so big as a mustard-seed, from the patient or a friend, and we plant it among the torpid granulations; it sticks, it unites, it lives, it feels, and becomes with its new home one flesh, not to be put asunder. John Hunter had taught us to expect this. But, better still, it becomes a centre of new

growth. Healthy skin begins to form round its edges. Praise be to the All-merciful ! not only disease, but health also, is contagious : better still, it is infectious ; it has stepped over the gulf of festering stagnation and is sowing growth along the neighbouring margin, throwing out peninsulas and promontories to join the parent piece of grafted skin. One who has experienced in his own person what uphill work cicatrization of a large surface is, must be pardoned some exultation at this surgical promise, and may be allowed an Utopian dream of restoration which would throw present success far into the shade. Even the practitioner upon others' ailments cannot but feel enthusiasm at the revelation of this important law of Nature. Does it not promise to explain the hitherto inexplicable benefit derived from firing, blisters, mustard, croton oil, caustic potash, and other means of cure by external sores ? It is when the artificial sore is getting well that the benefit arises : as the new healthy tissue shapes itself outside, it infects the diseased parts with health.

It is possible, also, that by applying the same principle to blood-letting we might learn the true use of that now unpopular treatment. We have left it off because it failed to do what we had been led to expect of it : but may it not have another use in a differently selected class of cases ? May it not set in action the healthy formation of new blood, replacing over and above the previous loss ? However, I must not trespass on your time with untried speculations.

I am not telling the tale of a buried event, but aiding to record what is passing under your eyes ; an instance of theory grounded on experiment paving the way for practice. Not experience is teaching us these things, but designed scientific experiment. It is this path of progress which our immortal Harvey bids me to-day exhort you to follow.* Arduous, indeed, it is, and tangled, yet leading always on, and much freer from pitfalls than that direct empirical method of trying remedies which Hippocrates has so emphatically pronounced "slippery". Science may guide us slowly, but she never guides us backwards.

In no direction does there seem a more favourable opening for experiment, at the present day, than in that to which the name of Harvey is for ever attached. The mysteries of the circulation are now open to be unravelled by new instruments of precision of yearly growing ingenuity. The improved microscope, the ophthalmoscope, the sphygmograph, and the dynamometer, may help lesser wits to make discoveries of which Harvey would have been proud ; while the use of chloroform removes the serious objection urged by humanity against experiments on animals. We are not asleep : our Sanderson is justifying his scientific surname by devoting to the increase of physiological knowledge months and years during which, with less labour, he might have heaped up wealth. I especially introduce his name here because the sphygmograph, which he has tried to make popular among us,† is the embodied acting up to a principle of great importance in Harvey's eyes—the ocular demonstration of scientific truth. I need go no farther than this room for an instance. Those brown boards over our heads,‡ in spite of time and neglect, exhibit the complete arterial systems of two bodies, dissected out and dried *in situ*. It is a work of months, if not of years ; and I doubt not but that some will denounce as sinful waste the employment of Harvey's fingers in such mechanical handicraft. He thought differently, and held no labour thrown away if spent in producing a lively mental impression, such as we gain from those preparations. Herein lies the great merit of the sphygmograph. The obscure feelings of the finger-tips are brought under the cognisance of the sense that most directly affects the mind—*oculis subjecta fidelibus*—so as not only to be shown, but "delivered in number and weight", as the son of Sirach advises all material things to be estimated. Do not think of the pulse portrait-painter, even as at present perfected, as a mere physiological toy. Had it done no other good deed, eternal gratitude would be its due for putting down the tyrannical imposture of the *tactus eruditus*—for no one has vaunted such erudition from the time when it could be tested in black and white. But I think a sphygmograph can do more than that ; it can tell us what really existing movements to feel for in the pulse. The tool may sharpen the wits that use it, and teach its pupils in the end to dispense with its services.

Since Harvey, the physiology of the sanguineous circulation has been pushed on by many distinguished men, but I do not know of any step more important than that made during the last two years by the French savants Messrs. Legros and Onimus. By an elaborate series of experiments they have deciphered the riddle which has puzzled Harvey and Hunter, Magendie and Claude Bernard—how the microscopic

arteries assist the current of the blood through the capillaries. Indeed, it puzzled the last-named physiologist so much, that he definitely confined the agency of the arterioles to resisting the force of the heart. To Messrs. Legros and Onimus this did not seem to accord with the economy of nature in working the way of fluids through other organic tubes. It was a wasteful expenditure of force. Spurred on by this thought, they sought, and they found, in the arterioles a regular peristaltic wave, an intermittent progressive muscular action, such as that which carries the morsels down the oesophagus, rolls the mass round and round in the stomach, and passes it along the ilia. With a microscope they were able to follow this newly seen wave in the frog's web, then to detect it in the transparent part of the rabbit's ear, then to see it with the ophthalmoscope in the human retina. It seems to me that a very wide field, indeed, for experiment is opened by these observations. A knowledge of the action of remedies on this peristaltic circulation generally would form a new standing-ground for rational therapeutics ; and the discoveries by Waller and Bernard of special systems of vaso-motor nerves, governing special parts, might be made practically useful.

It seems to me, also, that our various mechanical and other means of observation have arrived at a degree of perfection sufficient to allow of prosecuting with advantage researches into the genesis of disease by direct experiment.

The most certain way of knowing how a thing is generated is to generate it yourself. The lower animals must of course afford the material on which the bulk of these experiments can be made ; and it is, therefore, of the utmost importance to know how their bodies and liabilities to morbid phenomena differ from those possessed by us, so that the necessary allowances may be calculated.

Most opportune to the gaining such knowledge is the prospect before the country of the permanent establishment of an institution for the study of the diseases of animals. I am in hopes that the certainty of advancing science, open to the staff of this institution, will make its offices an object of ambition to those among us whose age renders ambition still graceful. They will be able to feel, not only that they are promoting the selfish interests of mankind, but that they are repaying in a substantial manner the services of our devoted immemorial slaves. For it must be understood that the final view of the foundation is distinctly charitable, and that the cure of animal disease is the end to be attained by its study.

The bulk of these experiments must be doubtless carried out on inferior creatures, and, therefore, must wait upon a parallel prosecution of comparative pathology. But there are examples of the study of disease by enthes to which our own noble bodies have lent themselves—lent for an ulterior advantage, no doubt, and therefore I used a word implying no notion of sacrifice. The cases of vaccinia and syphilis may be especially cited as instances of a more than usual knowledge of a disease's etiology, being due to a study of it as artificially implanted.

All, however, cannot hope so usefully "to study and search out the secrets of nature." Many wise people, praiseworthy for self-knowledge, are aware that the quality of their intellectual powers, bodily weakness, education, or social duties, disable them for playing the part. Harvey bids me say a word to them too, when he enjoins the orator to hold up for imitation those who have ministered of their substance to our College.

The "Comemoration of all the Benefactors of ye sd College by name," has its place taken by those boards in the theatre on which even the smallest contributions are from time to time recorded. We have not forgotten even the window-cushions and table given by the unlucky Lady Arabella Stuart, though they perished in the fire of London, I suppose. Let us not think scorn of a care for the bodily comforts of those who are executing a trust for our benefit. Hospitality, of which these gifts are an humble form, is a high Christian virtue, and is all the higher for her humbleness. I feel very glad that of late years our College has itself resumed the exercise of this virtue by reviving, albeit in the somewhat sad shape of *conversazione*, that domestic feast which Harvey gave us money to pay for.* It had been omitted for many years ; not, I fear, from self-denial on the part of the Fellows, but because a proud and luxurious age despised the frugal festivities of its forefathers. To those simple souls, as to Sir Toby Belch, "cakes and ale" was a synonym for a merry-making. On less than that, indeed, the censors are expected to make merry once a month ;† and, doubtless, the annual joviality was equally wholesome and economical as that monthly repast. You, however, have degraded into a ballot-box the

* The commemoration of benefactors is to be accompanied "with an Exhortation to the Fellows and Members of the said College, to search and study out the secrets of nature by way of experiments."—Harvey's *Deed of Gift*, MS.

† In the Lent Lectures of 1869 at the College, and in his *Handbook of the Sphygmograph*.

‡ The Tabulæ Harveianæ in the gallery.

* "And that once every year there shall be a general feast kept within the walls of ye sd college for all ye fellows yt shall please to come."—Harvey's *Deed of Gift*, MS.

† In accordance with Harvey's wish, a pocket of cakes and coffee is provided for each Censor at their meeting.

punch-bowl given you by Dr. Freind and his co-censors (in 1719), and scorn to dine abroad unless tempted by French cookery and the costliest vintages. We have at any rate the grace to feel that gormandising would be misplaced within our walls; and, until prevalent habits become more moderate, I do not see that we could carry out Harvey's wishes in any mode better than by this *conversazione*. Let us, however, look upon it as a provisional feast.

Some of our benefactors are distinguished as the founders of sundry lectureships called after their names, with which you are familiar. Applied, as intended, to the ocular demonstration of physiological discoveries, these are still made useful.

Notwithstanding, I cannot conscientiously exhort you to a literal following of Croone, or Gulston, or Lumley. The date of a small volume in your library, published by William Caxton, at the bottom of the next street, in 1471, reminds you that four centuries ago there had begun a revolution which renders the foundation of new lectureships an anachronism. The printing-press has crushed the pulpit. It is wise to accept the fact, and to devote to the spread of knowledge by the newer mode, those funds in the disposal of which we may wish to rival the open-handed among our ancestors. There is no way by which a man shall more surely hand down his surname to futurity than by linking it with the publication of the researches of others in a more liberal form than their incomes allow. Remember that you have at your disposal not your own purses only, but that those of your patients will often open at your bidding. I read in the annals that the table and cushions I have alluded to were given "*suasus Doctoris Moundefordi*," and I commend the example to your imitation. Dr. Moundeford had been a kind friend to Lady Arabella during her struggle against the mean tyranny of James the First; and he apparently preferred that the graceful acknowledgment of his kindness should be paid to his college rather than to himself.

Those who like modern instances best, may find one in the noble contest last year between our co-fellow, Dr. Quain and Mr. Cunliffe, the banker, as to which should give £2,000 to secure the building of the Brown Institution for studying diseases of animals.

I have represented designed experiment as the sharpest spur to the progress of rational medicine. But doubtless the guiding vein is observing experience. And it is by experience alone that we can be led to the answer of the question which I asked at the beginning, namely, whether the view which influences modern therapeutics be true as well as new. Some hint as to the future answer may be gained from the more favourable prognosis we are now enabled to give in several diseases whose course is marked and import grave, such as rheumatic fever, pericarditis, pneumonia, typhus. But the final solution must be found after many years in a continuance of the physical improvement noticeable throughout our native population, in increased length of life and diminished liability to fatal sickness, as witnessed first by increase in the profits divided at insurance offices, and latterly by the lessened mortality of the whole population.

To the court of experience we are, one and all of us, called as jurors. There are millions of experiments performed daily by observers who can regulate their conditions. But how are we prepared for turning the experiments into account? What training does the medical student go through which shall enable him to exercise his franchise? I cannot but say that those of us who are teachers in schools have greatly failed of our duties in this respect. I have never yet, as examiner, come across a candidate for diploma, instructed in the art of systematically observing and recording the action of medicines. What an awful waste of raw material is here! Surely the chairs of *materia medica* would be better employed in training a class how to observe, than in discussing varieties of cinchona bark or the shape of senna leaves—a kind of knowledge which no one ever really gets from lectures, but, if he require it, either from a book or a warehouse.

To the court of experience we are one and all of us called as jurors, but more especially those who have the privilege of hospital practice. The duty of aiding in the decision of these questions, by communicating the knowledge gained from our patients, is one that cannot be evaded, and is incumbent upon us to the end of our lives. It can no more be thrown off than can the obligations of a crown, or of inherited wealth. I have sometimes been asked how it is that medical men seldom retire, and usually die in harness; and I say that their harness is their uniform, their decoration, their chiefest reward, and that they lay it aside only at the bidding of their commander-in-chief. When I was in Italy some years ago, on a holiday tour, enforced by a surgical operation, I hesitated whether I should not lengthen my holiday to the end of my life, and leave the race to the swift, the battle to the strong. "Were it not better done, as others use, to sport with Amaryllis in the shade, or with the tangles of Neera's hair?" In visiting Pompeii, I stopped more than once at a sentry-box by the sea-gate, where there

were found the skeleton and arms of a Roman legionary set on guard eighteen hundred years ago. That nameless sentry, I thought, ignorant, sensual heathen, whose flesh lies mouldering among the *debris* of brothels of unmentionable atrocity and filthy wineshops, will yet to the resurrection-call answer "Adsum, Domine!" from a vantage-ground of dignity second to none in the universe—at his post, waiting for orders to leave. And so I turned and came home.

THE ANTISEPTIC TREATMENT OF WOUNDS.

By EDWD. DRUMMOND, M.D. Edin., M.R.C.S. Lond., Oldham.

AMONG four cases in the practice of the Liverpool Royal Infirmary (illustrative of the treatment of wounds on the principles laid down by Mr. Lister), published in the JOURNAL of May 6th, is one of strangulated hernia, in which the wound healed in three days. Having recently treated an almost identical case, with the result of perfect union by first intention, I think it not unworthy of mention.

K. S., aged 30, a member of a family hereditarily disposed to hernia, has been the subject of the oblique inguinal form for six years. I was summoned at six o'clock on the morning of May 3rd, 1871, the hernia having become suddenly strangulated. Having failed with the taxis, I performed herniotomy, the patient having been chloroformed by my friend Mr. Bromley. I opened the sac, and returned a knuckle of intestine and a large portion of omentum. At 6 P.M., I closed the wound with three silver wire sutures and strips of *emplastrum saponis*, placed a pledget of wet lint over the wound, and applied the usual bandage. Next day, she had passed a good night, and was doing well. The following night, the patient was attacked with abdominal tenderness and purging. I saw her at 6 A.M. on the 5th, and ordered two grains of opium immediately, followed by grain-doses every hour. At 9 A.M., the pain was almost gone, and the purging was arrested. At 7 P.M. (forty-nine hours after operation), I removed the dressings, and found perfect union by first intention. The patient got up on the fifth day.

This case shows that at least equally good results may be obtained without as with antiseptic precautions. I found the carbolic acid dressing in use in the York County Hospital in the summer of 1865, but was unable to see that it possessed any special virtue. Ever since the publication of Mr. Lister's views, I have carefully carried out the more elaborate treatment which he suggests in almost every case under my care, including amputations, resections, excisions of tumours, etc.; and the balance of evidence in my mind has been generally in its favour. For example, I removed recently a large fatty tumour by two semi-elliptical incisions eleven and a half inches in length. The wound, closed by fourteen silver wire sutures, and treated antiseptically, healed throughout in four days, without a drop of serum or pus. I am unwilling, therefore, to place myself among the number of those who disbelieve totally in the antiseptic treatment; but I cannot help thinking that the time has arrived when we may look for some authoritative settlement of the question. In medicine, and in a lesser degree in surgery, the tendency has ever been to exaggerate the benefits of new methods. We are all prone *jurare in verba magistris*—ever, let us hope, laudably anxious to be the pioneers of a new era in our art. Can we not, by treating parallel cases with and without carbolic acid dressing, definitely decide whether, on the one hand, the antiseptic method is all its enthusiastic advocates believe it to be, or, on the other, save ourselves from the opprobrium of unduly vaunting a means of treatment which will not stand the test of experience?

THE ENDOSCOPE IN MILITARY SURGERY.—The *Wiener Medizinische Wochenschrift* for June 24th contains a paper by Dr. Christian Fenger, of Copenhagen, in which he suggests the application of the endoscope in the examination of bullet-wounds. From experiments on horses, he last year came to the conclusion that, by means of this instrument, the surgeon may be enabled to see pieces of clothing that have been driven in, or bullets impacted in the cancellous structure of bones; and, having seen them, to remove them easily by means of proper forceps, etc., introduced through the tube of the endoscope. While attending one of the ambulances in France during the late war, he had no opportunity of examining wounds in the early stages; but, in several instances in which he made an examination some weeks after the receipt of the injuries, he was enabled, by introducing an endoscope, to see the interior of the wound distinctly. The introduction of the instrument caused no pain nor hæmorrhage, nor any subsequent irritation. To what extent the suggestion as to the removal of balls and foreign bodies can be carried out in actual practice on the human subject must, Dr. Fenger says, be decided by the future.