General Remarks

ON THE

PRACTICE OF MEDICINE.

BY
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THE HEART AND ITS AFFECTIONS, NOT ORGANIC. (*Continued.*)

IV.—*The Frequent Pulse at its Lowest Degree of Significance.*

It is a fallacy to conceive that disease, as represented by its symptoms, is difficult to know and to treat in proportion as it is a thing of more danger and severity and altogether more extreme. The contrary would be nearer the truth. In the cases which have been considered, the symptom of the frequent pulse, as the single representative of the disease and of the vast peril involved in it, and as the single indication of what is to be done to save life, if life can be saved, was comprehended in all its bearings at a glance. But, in the vast majority of cases, this same symptom will be found less salient, and therefore more to be searched after; less standing alone, and more one of a multitude, and therefore needing to be compared, contrasted, and weighed with other symptoms, before its value can be ascertained. For, indeed, it always has a value, small or great, though it be a variable value in different cases of the same disease, and variable, too, in the same case at different times. These are things not to be seen through at a glance, but contain matter for patient thought to work upon.

Now, as we have hitherto dwelt upon the class of cases in which the frequent pulse is at the greatest and highest computation of danger, so we will next touch upon the class in which it is at the least and the lowest, and reserve for our last consideration the class which is intermediate between the two. And this last we shall have a better chance of understanding aright by previously knowing the two extremes.

Take twenty cases, and let the symptoms in each be characteristically different enough to show that they represent twenty several forms of ailment or disease; but let all the twenty have one symptom in common, and let that be the frequent pulse. Such are realities which are presenting themselves day by day to the experience of physicians. Further, let the symptoms differencing the nature of the ailment or disease in each particular case be so little severe in any, and the one symptom common to all—viz., the frequent pulse—be in all so little above the natural standard, that no apprehension is felt about any single case from first to last; and all the twenty do, in fact, according to anticipation, come to a favourable result. And such, too, are happy realities familiar to our experience.

Now what is it which makes the number of the pulse worth the reckoning in such cases as these,

that we should take so formal an account of it as we probably should and ought to do in our daily intercourse with the sick? Perhaps some of us might not easily be got to trouble ourselves about the meaning of a symptom which occurred in twenty patients, all of whom got well, as we expected they would, be its meaning what it may. But the frequent pulse, as the accompaniment of disease, is never without a meaning; and, whether it be of great or small degree, whether it denote a great present danger or no danger at all, its meaning is always the same in kind. In all these twenty supposed cases, the pulse, being a little above the standard of health, denoted that the disease was making itself felt by the nervous system. In none did it represent any present peril; but in all it contained the germ capable of possible increase to the greatest magnitude and the greatest danger.

There are other things belonging to feeling and function, in our vital economy, which follow the analogy of the frequent pulse in this respect, that whether they be much or little, or great or small, they preserve the same meaning in kind; yet, according to their degree, they notify and prepare the way for very different results, even as different as life and death.

Hunger and thirst may amount to nothing more than a little sense of physical impatience, natural, wholesome, and not unpleasant to feel, about dinner-time; or they may reach the fierce craving which is ready "to demolish stone-walls". But they are the same hunger and thirst, after all. The first are the hunger and thirst by which we live; the last the hunger and thirst by which we perish. And it is the chief business of our lives to provide that the first become not the last; and every day we are acknowledging practically the possibility, though we have neither thought nor fear about its being realised. Nevertheless, we do sometimes find it realised in single instances of shocking notoriety. And the fate of large armies in war, and of some smaller "armies of martyrs", missionaries for man's enlightenment or for God's truth, shows that hunger and thirst should be the care of nations and governments, and that they who put human life to its hardest uses should study to preserve it.

The same may be said of pain. There is the pain which scarcely disturbs the equanimity of a child, and there is the pain which kills; and the first contains the germ of the last.

The Frequent Pulse of Acute Inflammation in the Strong and previously Healthy.

There are diseases, then, almost too much for medicine to combat with, and diseases almost too little for medicine to care about; and the frequent pulse is an ingredient of both. In the former, it is the one ingredient which is the very gauge of their formidable character; in the latter, it is that which should at least always prevent us from regarding them with indifference. But there are many diseases far less appalling than the one class, and less trivial than the other, which hold their place between the two, and have a greater practical interest than either. They are uncertain enough in their event to keep both hopes and fears alive during their progress, and amenable enough to remedies to encourage and reward the study of a whole life how to use those remedies aright. These many diseases

have still the pulse, and its qualities and number, to present as chief objects upon which such practical study can be profitably bestowed.

Let the patient be in the prime of life and health, and let his disease have nothing specific or malignant in it, but proceed from some common accidental cause, such as exposure to cold, or mechanical injury, or a blow; also let the inceptive rigor or chilliness be past, and the disease have now plainly declared itself, both what it is and where it is—in fact, that it is acute inflammation in some vital organ. And now, before the disease has had any treatment to interfere with it for good or for evil, or to alter it in any way, the pulse will denote the morbid action in which the blood and blood-vessels are engaged by its new quality of hardness, and the sympathy of the nervous system by the increased number of its beats.

Recollect, it is assumed that the patient was previously in perfect health and the prime of life. At this stage, when the great trial of the constitution from the disease and its treatment is yet to come, the pulse will be more or less frequent from a given amount of inflammation, according as it occupy a part more or less nearly allied with the nervous system by sympathy. To speak generally, the pulse will from the first be more frequent when the inflammation is of the organs within the abdomen, than when it is of the organs within the thorax. Moreover, the inflammation, though just emerged, will produce a greater frequency of the pulse according to its extent; and if its extent be very great, and the part it seizes upon be in close sympathy with the nervous system, the coincidence may even be fatal. Strange events occur in the course of a long experience, taking one by surprise at the time, but, when duly considered, finding their place in the order of things to which they naturally belong. I have seen, in the young and robust, inflammation (apparently common inflammation) seizing upon the peritoneum, and the pulse at once becoming countless and almost imperceptible, and rapidly sinking into death; and examination has disclosed the disease pervading the entire surface and every flexure and fold of the membrane. And still it has been in its earliest stage. The membrane has been entirely injected with red; but scarcely a trace of fluid or of lymph—the proper products of inflammation—has appeared upon any part of its surface or in its cavity.

But to what order of things does such an event as this naturally belong? Truly it belongs to the same order with those two remarkable cases already cited. *There* the disease was in its germ or first development; but already the nervous system felt it, and was overwhelmed by it. *Here* the same event is brought to pass in the same way. *There* the disease partook of a specific poisonous quality, pus-poison in the one, scarlatina-poison in the other mingling with the blood. *Here* it is of the nature of common inflammation; but its vast extent and the part it occupies are equivalent for evil with a malignant quality. It is no figure of speech, but a literal expression of the fact, to say that the disease destroys itself and destroys life at the same time.

This is a most rare event of inflammation, yet much too interesting not to fix our attention for a moment. Well, but suppose the inflammation acute,

and the reaction complete and vigorous, there will be found wrapt up together in the same pulse these two cardinal symptoms—a quality of hardness, representing the disease; and a more frequent beat, representing how the constitution bears it. Such an inflammation will require remedies of much force; and, at every stage and step of the treatment, the pulse will still denote by its quality the need of the remedy, and by its number the power of bearing it. Let *venesection* be the remedy. Upon every use of it, a very strict judgment must be held upon its immediate effects; and that judgment is still to be concentrated upon the pulse. What *now* of its hardness, which called for the venesection? What *now* of its number, which said that the constitution would bear it? If, an hour or two afterwards, the pulse has lost much of its hardness and many of its number, then assuredly the venesection has told remedially upon the disease, and not hurtfully upon the constitution; and, should it return to its former hardness and its former number, venesection may be employed again. After the second venesection, the like strict judgment must be directed to the same points; and, should the pulse again show an abatement of its hardness and its number diminished, then has the venesection again fulfilled its immediate purpose of good, with no contingent evil.

I cannot determine how often venesection may be safely repeated as a remedy for acute inflammation, the hardness and the number of the pulse thus rising and falling in constant harmony with each other. But as soon as that harmony ceases to be maintained, or is much disturbed; as soon as, whether it be after a first or second or third venesection, the pulse, while it has lost its unwonted hardness, is found to retain its unwonted number, or to have it increased, even greatly increased,—henceforth venesection will become a very doubtful or an absolutely forbidden remedy. Thus far it has exercised a salutary check upon the inflammation. And the hard pulse reduced to softness testifies as much. But it is now beginning to have, or it has had already, some hurtful influence upon the powers of life, or upon the nervous system; and the pulse, remaining as frequent as it was, or becoming still more frequent, is sponsor for the fact.

Now at this point the inflammation may cease altogether; and there may be no further need of remedies properly antiphlogistic, either great or small. The last depletion brought it to an end, and so did its work *upon the disease* well, very well. But it would have done it work, *upon the whole*, better, much better, if, in carrying off the disease, it had not left the pulse as frequent or more frequent than when the inflammation was present and progressive. The thing may be of no consequence when we have constitutions naturally vigorous and healthy to deal with; only, in now reviewing the treatment, our just judgment of it must be, that we have pushed our great remedy a little further than the necessity of the case required. But the inflammation may not cease at this point; it may still call for treatment. And the treatment of the inflammation now making progress, with a pulse of more frequency and less power, is no easy task. Of this something may be said hereafter. At present, let it be further remarked, that not only when we use venesection, but when we take blood in any way, whether by venesection, or cupping, or leeches; and, moreover, not

only when we bleed, but when we seek to arrest a rapidly progressive inflammation by a rapidly impressive remedy, be that remedy what it may, whether mercury, or tartar emetic, or colchicum,—the number of the pulse still mediates between how much is needed and how much can be borne. It balances between the force of treatment, as bearing salutarily upon the disease on the one hand, and as bearing hurtfully upon the nervous system and the powers of life on the other. And yet it is not the number of the pulse taken absolutely. It is not any certain number; but its number as it is increased, or is diminished, or remains the same, day by day, under the working of means and agencies powerful alike for good and for evil.

The Frequent Pulse of Acute Inflammation in the Weak and Cachectic.

But inflammation does not befall the young and strong exclusively; it is much oftener found in the weak and cachectic. In them, too, it is more generally incident to all periods of life, and comes from slighter provocations of injury and accident from without. Indeed, its connexion with any external exciting cause at all is, in the weak and cachectic, frequently so slight, so uncertain and unapparent, that we are led sometimes to deem it altogether spontaneous and engendered from within, and coming direct from the pravity of the constitution itself.

Now it is a general truth that, in these weak, these cachectic and often seemingly spontaneous inflammations, the frequency of pulse begins earlier and abides longer, and runs up to higher degrees, than in the strong and healthy; or (to look through the sign to the thing signified) the sympathy of the nervous system and the trial to the powers of life are now felt sooner and more constantly, and are carried to greater extremity.

Now, for brevity's sake, let us use the terms "inflammation of strength" and "inflammation of weakness"; for a little more must yet be said of both in their contrast with each other, if we are to get at the true meaning of the frequent pulse in connexion with either, and gain from it all the help it can give us in their treatment.

In all that anatomy discloses after death, and, if the part affected be within reach of the ear, in all that auscultation teaches during life, the inflammation of strength and the inflammation of weakness are the same thing; no mere anatomist or auscultator can tell which is which. But the same treatment which saves in the one case will kill in the other; for their treatment is determined, not by the conditions in which they agree, but by those in which they differ. Now they agree in all that is organic; they differ in all that is vital. What is organic consists in what can be seen, heard, or dissected. What is vital consists in what is felt and acted, and in modes and degrees of feeling and action—preeminently in pain; preeminently in fever and its attributes of cold and heat and perspiration; and preeminently, and above all, in the movements of the heart and arteries, the qualities and number of the pulse.

It is remarkable how health and strength can entertain inflammation, and go through with it, and yet show few or no signs of being vitally hurt by it. I have seen a few cases of inflammation requiring bloodletting, and giving its characteristic hardness

to the pulse, where the number has not been increased a single beat beyond the ordinary standard. Indeed, where there are health and strength, while the inflammation denotes its severity by the force of the remedies needed, the number commonly falls short of 100, and seldom exceeds it. But where there are cachexy and weakness, though the inflammation appertain to no part in strict alliance with the nervous system, the number of the pulse is commonly very frequent throughout. It often rises at once to 120, and in the end it often exceeds it.

Thus strength seems to answer the stimulus of inflammation vigorously, but temperately. It puts its characteristic hardness into the pulse, without greatly multiplying the movements of the heart and arteries. It feels the disease, and bears it well. But weakness seems to answer it with (at most) only a show of vigour, and impatiently. It may give something like its characteristic hardness to the pulse, but not without multiplying exorbitantly the movements of the heart and arteries. It feels the disease, and bears it ill.

But the inflammation of strength and the inflammation of weakness, albeit they are by nature the same things organically and different things vitally, may, by force of accident and circumstances, become *vitally* equalised and the same.

The inflammation of strength is very liable to mischance in respect of its treatment. Opportunity is lost; and when a severe and rapidly progressive disease needs a severe and rapidly impressive remedy, opportunity is very precious, and the loss of it may be the loss of everything. Many a fine robust fellow have I seen who has suffered acute inflammation of an internal organ two or three days without seeking or without being able to procure medical aid; and then, when he has procured it, his disease and its treatment have become a puzzle, from the conflicting indications which have arisen in the meanwhile. Three days ago, a venesection would probably have arrested the inflammation, and the patient have been safe by this time, and in a fair way of recovery; but now, if venesection be adopted, it has been because present symptoms have made us rather afraid to omit it than ready to use it. There has still been an inflammatory hardness in the pulse; but, to set over against it, there has been great frequency. There has been enough of heat and enough of seemingly vigorous action still remaining; but, to set over against them, there has been too much of nervous sympathy, too manifest a trial of the powers of life already begun.

Well, venesection has been adopted; and, happily, it has been just in time. It has abated the hardness and diminished the frequency of the pulse, and raised the nervous system and the powers of life. And thus the inflammation has reclaimed the characteristics of the constitution to which it belongs, and been still the inflammation of *strength*.

Or venesection has been adopted; and, unhappily, it has been just too late. It has taken the hardness out of the pulse, but it has greatly augmented its number. Also it has sunk the nervous system and the powers of life. The inflammation has lost the characteristics of the constitution to which it belongs, and become the inflammation of *weakness*.

But the inflammation of strength has been turned into the inflammation of weakness in other ways than by unavoidable mischance. Among the perils

of disease we must not refuse to reckon the errors of physicians. And this truth has had its instances and its proofs when inflammation was to be treated by venesection or some sort of bloodletting. The choice of the remedy, and its time, and its measure, and its iteration, whether often or seldom, or not at all, are confessedly among the difficult things of medical practice; and he must be either very self-complacent or very oblivious who cannot call to mind that herein he has ever fallen into mistake. Amid many possibilities of error, it would be strange indeed to be always in the right. Nor among the perils of disease must we refuse to reckon the interference of friends with its treatment; and this, too, has been seen when inflammation has had to be treated. And, in charity to human feelings, it is hard to blame them. They see a perilous disease and a perilous remedy. They cannot restrain their anxiety. But it is unfortunate when they show it by distrustful questionings at every turn of the disease and on the use of every remedy; thus always aggravating to the physician his sense of responsibility, at the hazard of overruling his judgment, and of withholding him from doing the full measure of what is right. And too often this has been the sad result. What might have been wholly remedied has been only half remedied; and what has remained has been far less tractable now that it is allied with weakness instead of strength. In truth, there is nothing in practical medicine harder to deal with than this inflammation of weakness, whether it be natural weakness, or the weakness of circumstances and accident, or strength abused into weakness by the fault or mischance of medical treatment. It is all practically the same thing, however it come to pass.

Let it be remembered, however, that our subject is not inflammation and its treatment, but frequency of the pulse. Yet this frequency of the pulse was not to be understood in its pathological significance, otherwise than by our becoming acquainted with it in those diseases which display it most conspicuously. Such are fevers and inflammations. For in them the nervous system is most largely engaged. And the nervous system, for the share that it has and the part that it plays, has its surest index and measure in the number of the pulse.

Already, as to the inflammation of strength, we have gone so far into its treatment as was needed to show the number of the pulse guiding and regulating it. And just thus far, and with the same intent, we will now touch upon the treatment of the inflammation of weakness.

In the inflammation of strength and its treatment, we showed the number of the pulse arbitrating between the curative and hurtful effects of great remedies, sanctioning their use up to a certain point and no further, and thenceforth forbidding them. We followed the treatment so far as, under this safeguard, the operation of these remedies was successful. But we ceased to follow it, when the inflammation was found still to continue, and the pulse becoming more frequent no longer sanctioned the use of the same remedies for its cure; when, in truth, the inflammation has assumed the characteristics of weakness, and required another treatment, but still under the same safeguard. For in the inflammation of weakness, as in the inflammation of strength, the number of the pulse does not directly

suggest the use of any remedy or any mode of treatment; but here as there it still serves for an arbiter. Here as there, when other indications have pointed directly to the remedy or mode of treatment, then it sanctions, or forbids, or moderates their use.

Let it always be borne in mind that the progress of inflammation within the part from one stage to another, until it reaches irreparable disorganisation, need not be less rapid when allied with weakness than when allied with strength. It does not move slower, because it moves with less force. And thus it calls as much as ever for a remedy and requires as much as ever that the remedy should be seasonably applied. Only the direct and immediate aim of the remedy is now different.

The ultimate aim of all treatment is indeed the same. Whether the disease be one of weakness or of strength, be acute or chronic, be common or specific, the end and aim is to cure it. But immediately treatment has to do with many an aim which is not the end itself, but only conducive to the end.

When there is much and unremitting heat of skin, and the pulse is hard and yet but moderately frequent, and the vascular system and the nervous system are strongly and steadily reacting, and all that moves and all that feels within the man are (so to speak) doubly alive, then, the fact and the seat of the internal inflammation being once ascertained, it is less absolutely necessary for the success of our treatment to go into its particulars. It is enough, for the present to take the inflammation in its largest sense, without noting its stages and its consecutive phenomena from day to day or from hour to hour. For now the remedy has a less concentrated aim. The indications of treatment are more diffusive and general.

But in proportion as the heat of skin is less sustained and less in degree; and the vascular system, and the nervous system, and all that moves, and all that feels, show less of reaction and less of life, and the pulse is less hard and more frequent, then we have the more need to be acquainted with the exact seat and stage of the inflammation and all its organic conditions; and its shiftings and movements from day to day; its advancing, or receding, or standing still. For now the treatment is more and more drawn towards the part, and more concentrated in its aim.

Between no display of strength in the constitution at large and extreme weakness; between no notable sympathetic reaction and vital surrender and collapse, there are many states and degrees; and the progress, the rapid progress, of inflammation in the part is compatible with them all.

VACANCIES. The following appointments are vacant:—medical officer and public vaccinator for the Clonmel Dispensary district of the Clonmel Union; medical officers for the Newcastle-under-Lyme district; for the Hanbury district of the Droitwich Union; for the parish of Kirkowan, Wigtonshire; for the Colbridge Dispensary district of the Colbridge Union; for the Clifden Dispensary district of the Clifden Union, county Galway; for the Claudy Dispensary district of the Londonderry Union; ophthalmic surgeon to the Aberdeen Royal Infirmary; to the Bellaghy Dispensary district of the Magerafelt Union, county Londonderry; for the Cleeck-heaton district, North Brierly Union, Yorkshire.