PRECISION IN THE TREATMENT OF CHRONIC DISEASES.[1]

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A PART of the difficulty in effectually securing the attention of the best of the mass of our profession, lies in the fact that to do this a busy man must go on insisting in too frequent writings upon the value of any new drug or method. As we of necessity use the journals to do this, what is said does not always reach a complete or fit audience. Brief statements as to new books, new drugs, new methods, succeed one another in our journals with bewildering speed. One misses the grave scholarly estimates common in other days; the accurate large-minded handling of a whole subject by men of rank and esteem in the profession. A medical journal is apt to look nowadays like an advertisement fence with hurried graphic *affiches* of the latest novelties. In this rush of equality of setting forth of the good and the bad we run some risk of not soon enough comprehending the more troublesome, and yet more valuable methods. Soon or late they win, for our great jury in the end is seldom wrong. I somewhat suspect that the numberless new drugs may a little have set us back in medicine, by offering so much to distract attention from the surer methods of general management in chronic disease.

No doubt there is a look of implied simplicity in the temptation to slay disease with a triple daily discharge of a promising drug; and how very promising the drugs are

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just now, and the journals, and the covers of the journals! It is a therapeutic fairyland. More natural means and more slow methodical management are apt to be set aside. They win no easy hearing. I have had many illustrations in my life-work of these passive and active obstacles in the way of teaching men new ideas, when these were troublesome, because accurate and carefully elaborated.

As I have been asked abroad and at home, over and over, to speak on the subject of the treatment which in Europe is known by my name, and here as rest treatment, I may assume either that it is not yet fully understood, or that I am presumed to have made in it further changes worthy of attention. I have, however, little to add. Its origin and history might be worth telling had I the time.

Yet something remains to be said as to those who use or misuse the method in question. My desire to speak as to this text is justified by the debate which took place upon rest treatment last year in one of your own societies. It then became clear that not all who assumed to use it had read my book, and that others failed to apprehend in it a systematic procedure, which involved the regular doing of several distinct things, scarcely one of which could be left out at will without damage to the desired result.

As a contrast to this loose method of dealing with my work, let me call attention to the words of Dr. William Playfair. He says: "I have used this treatment freely; I have nothing to add to it and nothing to subtract." The honour and fair dealing of such a statement strike one with pleasure. Of what one of your own members has said of it in a recent book I hesitate to speak. It has really given me new courage to bring this treatment before you to-night. I had supposed, indeed, that I had said my final word on rest treatment; but now I am tempted to think that in the way of insisting on its use, its complete use, there is still room for me to break my silence.

You all know what I mean by rest treatment. It is a final resort. Let tonics, change of air, exercise fail; let the gynæcologist have said his last word, or, what is more likely, done his last operation; then comes this rather troublesome method. I avoid detail here. We put a person in bed, use massage,

electricity, excessive feeding, and only at need, seclusion; forbidding letter writing, and in many cases for a time, reading. I continually hear of "modified rest treatment"—and a "kind of rest treatment;" and a physician says (and this is literal), "I have used all the details of rest treatment, but do not think it needful to keep the patient in bed." A doctor writes me, "Is massage really indispensable?" Another, "According to the rules of your admirable treatment, I kept Mrs. B—— in bed five months, and now she will not get up at all. What shall I do?" Of course, men are free to leave out the part of Hamlet, but then I prefer that Ophelia be left out also, and naturally I object to this being called my treatment, and to being held to critical account for failures so caused.

I shall say presently what I think about certain reasonable variations upon rest treatment, but now I am thinking of the typical instances of emaciated, broken-spirited, hysterical women, or of exaggerated neurasthenia—rarely unmixed with hysteria—cases in which no one can afford to depart from the rules I have laid down and yet hope to succeed, by this method at least. It is with just such sick people that the invertebrate doctor is sometimes driven to compromise; he says, "Ah, well, my dear, you shall have all the treatment except rest in bed; I won't insist on that." Or the woman says, "I must have the dear children every morning." The physician has not the courage to say, "I am not attending the children." So she has her way and the treatment fails. I, of course, prefer not to be made accountable for other men's moral or intellectual bankruptcies, or to be held responsible for the debts of indecision and weakness. Such men are like *Punch's* fashionable London physician. Says the Duchess, "Dear doctor, I could not think of it. What! cod-liver oil and whiskey!" "Certainly not, Madam. Shall we say curaçoa and cream?" But of course no one here has ever given way to this form of feebleness.

This is a treatment of detail, and just how you manage the minutiæ is of great moment. No treatment ever yet devised can be carried on without intelligent thought. The story of Sir Joshua Reynolds, and the need an artist has to mix his colours with brains, has here its applications as elsewhere in

life. The abler doctor lives above all text-books. He lives, too, above the mere fashions of his time in medicine. In the days of excessive bleeding there were Cardans, and later on Sydenhams, who knew when not to bleed, just as to-day there are among you those who comprehend that the lancet has still its place in medicine.

One sign of signal ability in the medical practitioner is the clear apprehension of the fact that, whatever the disease, it is an individual who exhibits and eternally modifies its phenomena. It is, too, the great men of our guild who never lose sight of detail in medicine. No patients so personally modify disease or its expressions as the nervous or hysterical; in no plan of treatment is success so entirely at the mercy of industriously perfected details of treatment, intelligently apprehended, and reasonably modified. Therefore is it that it is the best doctor, as a rule, who does best even with so definite a treatment as the one now considered. I have, indeed, known a clever woman to take the whole rest treatment with the aid only of my book and a maid. I have known nurses who had with brilliant success carried it through without a doctor. I have known very good physicians to fail, either because they lacked some moral quality, or because they slighted the details and left too much to nurse and rubber.

Let us linger over these a little. The nurse for rest cases needs a large amount of patient interest, power to distract or amuse, capacity to read aloud, tact and good-tempered cheeriness. It is a sharp test of character to shut up together for six or more weeks two women, and one of them ill and nervous. Divorce ought to be easy and ever ready. If you use rest treatment, question your patient early as to her nurse, and if she does not like her, even if in your eyes she is one of the best, it is wiser to give her up for another. I have had to change thrice in a week, displacing attendants who seemed to me good, and yet I won my battle at last. You cannot change the patient, you cannot change the doctor (how much one sometimes would like to do this!), but the nurse you can change.

Then there is the rubber, apt to be a gossip and to talk of cases. You will do well now and then to give a little time

to watching her at her work. Generally the Swedes rub badly and without method; are fond of mere *effleurage;* or slap and pound the distracted nervous woman into a condition of excitement. I have often been myself massèd in Europe, where such massage as rest cases need is ill understood. On the whole, it is far better done in this country. The American plan of muscle-kneading, carefully and systematically done with thought at the very finger-ends, is what we want. I am inclined to think one of the best tests of good massage is the power to rub out hard inflammatory deposits left after repeated pelvic inflammation. In these cases I use the massage as often as thrice daily, and at the close, where there are weak muscles and relaxed ligaments, employ a system of resisted movements of the thigh and belly muscles. Why one woman can rub a patient and leave her sleepless, excited, uneasy, and another succeeds in soothing her and in calming her nervousness is even yet to me a problem which I can solve by change, but cannot understand. The early use of massage, the dosage of it as to time and vigour, need attentive care; after a week it takes care of itself, but rest assured that for folks who do not exercise there is no tonic to compare with it.

There have been so few unfavourable comments on this method here and in Europe, that in looking over the many papers it has evoked, and the prefaces to the translations of my book in German, Russian, French, and Italian, I find little to answer. Some have set aside the daily use of electricity as needless and expensive. It is the one thing you may omit; I do not advise you to do so. In some cases it leaves the extremities warm when massage does not. It is apt to create at first some nervousness; therefore, for two days at the start, the nurse (and all good nurses can use electricity in this simple form)—for two days, I say, I ask the nurse to let the battery act as usual and to employ the conductors in due form without allowing any current to pass. The patient thus gets accustomed to an unusual remedy, and if nevertheless she be thus excited or made nervous, can then be told that no electricity has been used, and that future nervousness must therefore be laid to the account of her own watchful anxiety.

And so as to drugs. These nervous people are afraid of drugs,

or full of queer prejudices about them. If you give malt extracts (Wyeth's or Bass's are the best), they can be made to dissolve "that dreadful iron she could never stand," or be the unguessed carriers of mild and repeated aperients. I once had a too clever patient who declined to take arsenic or hyoscine, both of which I thought essential in her case. She asked the nurse if I had put either in the malt, but did not guess that the three oranges she took daily received each a hypodermatic injection of the two objectionable drugs. By-and-by, when she was mending, I told her, of course, and henceforth gave, in other and ordinary ways, whatever I willed to give.

I have elsewhere stated the modifications to which we may submit the treatment by rest. The most important has been elaborated and stated with care in Hare's *System of Therapeutics*, by Dr. J. K. Mitchell. Its success is a fair illustration of the power for therapeutic good of a life conducted for a time on schedule. And here again you must pardon me if I urge in your treatment of chronic disorders something of the accuracy we all carry into the management of acute diseases. It is really more essential to write out in detail how a man should live in order to get over a chronic malady than an acute one, where nurse and doctor are ever at hand. Let the following schedule of what we call partial rest explain my meaning. We have to deal, let us say, with a case of moderate neurasthenia and insomnia, with or without dyspepsia. In a word, you are to treat a woman not ill enough to be put to bed, not well enough to be cured by mere tonics, or even by these with change of air. You all of you know these cases. What I propose is to ask this patient to live by schedule, which may be modified to suit the case. I shall not read the too elaborate details, but I shall ask you to accept as exemplars copies of the typical formal scheme, which in every such case I have written out with care, because in many of its details it must vary with the patient. Remember it is not for a doctor, but for the patient.

Schedule for Partial Rest Treatment.—A.M. : On waking, cup of cocoa. Take bath. (Temperature given.) Lie down on lounge while using drying towels; or better be sponged and dried by an attendant. In this process the surface to be

rubbed red, or, if drying one's self, to use flesh-brush. Bed or lounge again. Breakfast. Before each meal take three ounces of malt extract; aperient at need in malt. Tonic after each meal. Detail as to breakfast diet. If eyes are good, may then read seated in bed. At 10 to 11 A.M., one hour's massage. Rest one hour; may be read to, or read if eyes are good, or knit. At this time, 11 A.M., four ounces of beef soup or eight ounces of milk. At noon may rise, dress slowly, resting once or twice a few minutes while dressing, and remain up until 3 P.M. See children, attend to household business; see one visitor, if desirable. 1 to 1.30 P.M., malt, etc., and lunch. Detail as to diet. At first, as a rule, let this meal represent dinner. Tonic, and after it to rest on a lounge, occupied as above, reading or being read to. If possible, to drive out or to use tramway, so as to get air. Walk as little as possible. On return from drive repeat milk or soup. About 5 P.M., electricity, if used at all. Rest until 7 P.M. Supper at 7 P.M. Detail as to meal. Malt as before, with or without aperient, as occasion demands. Tonic. To spend evening with the family as usual. Best not to use eyes at night for near view. Bed at 10 P.M. No letters to be written for two months, when most of these details have to be revised.

After two months of massage it should, in these cases as in complete rest, be used on alternate days, and by degrees given up. If the nurse or masseuse is able to teach the patient the use of Swedish Movements, it is desirable that these or some definite, slowly increased system of chamber gymnastics be continued for months. Finally, walking must be resumed with slow and systematic increase. After the second month I write out a schedule of less restriction, to be followed for six months.

What I dread most at the start, in all cases for rest, is grave insomnia. Whether it be accompanied by a state of mild mental excitement, such as we all know, or is a pure incapacity to go to sleep, or to stay asleep; or whether it be in popular medical belief a congested state, I am apt at once, in bad cases, to use thrice a day lithium bromide, at first in thirty-grain doses, at noon, at 6, and 9 P.M., given in the malt or not, and soon decreased grain by grain. If I want a positive aid at bed-

time, I prefer sulphonal in hot water. But of greater value are some of the hydro-therapeutic devices—and best of these is what is known, or not known, as the "drip-sheet." Just how this is to be given is of the utmost importance. The following memoranda, which I shall not read to you, but shall ask you to read hereafter, must answer to show how careful one must be, in my opinion, as to these details. I give it here in brief much as I do to a patient not under the immediate care of a nurse. I cannot help adding that several of the most useful of the water processes are neither taught in our schools, nor so accurately in hydro-therapeutic text-books as to be of much value to the general practitioner.

Memoranda for Use at Bedtime of Drip-sheet.—Basin of water at 65° F. Lower the temperature day by day by degrees to 55° F., or to still less. Put in the basin a sheet, letting the corners hang out to be taken hold of. The patient stands in one garment in comfortably hot water. Have ready a large soft towel and iced water. Dip the towel in this, wring it, and put it turban-wise about the head and back of neck. Take off night-dress. Standing in front of patient—the basin and sheet behind—the maid seizes the wet sheet by two corners and throws it around the patient, who holds it at the neck. A rough, smart, rapid rub from the outside applies the sheet everywhere. This takes but two minutes, or less. Drop the sheet, let the patient lie down on a lounge upon a blanket, wrap her in it, dry thoroughly and roughly with coarse towels placed at hand. Wrap in a dry blanket. Remove ice-wrap; dry hair; put on night-dress. Bed, the feet covered with a flannel wrap.

If all this seems to you as you read it too absurdly minute, I shall feel some regret. Yet believe me, it is worth the trouble, and the drip-sheet a remedy past praise. If it fail, a pack may succeed; but this is more familiar to you. I doubt if the use of the drip-sheet is as well known.

Since rest treatment has taken its place in medicine, I, and others, have extended its use. In the treatment of chronic alcoholism rest in bed for a few weeks has obvious value, and, combined with skim-milk diet and massage, is often of use.

In all forms of neuritis, local or general, rest is essential, and in alcoholic neuritis, rest, massage, milk diet, and the use every three to six hours of what I may call cold and heat alternates, will often triumph rapidly. This use of cold and heat is effected by putting the feet and hands in iced or very cold water a few minutes, and then applying in turn to each extremity the greatest heat endurable by mopping with soft towels dipped in nearly boiling water. The limb is then replaced in the cold water, and after three or more alternate uses of heat and cold is taken out, warmed well, and left dry.

My remarks in regard to neuritis lead me to say a few words about sciatica, which is nearly always some grade of neuritis. At least twenty years ago I began to treat such sciatica by local splint rest with from two to three weeks of local use of ice, if rest alone failed me. Although I have over and over called attention to these means, they have not so captured professional confidence as I could desire. Last year I wrote on them a lecture in the *International Clinics*, where it is, I fear pretty well buried amidst some good, and some poor, clinical lectures. As I have of late modified the treatment, and am sure from my own experience and that of Professor Osler, Dr. Sinkler, and others, of its great value, I beg to ask you to consider it with me anew. In any obstinate sciatica, where I can exclude spinal cord disease, constitutional states, tumours, etc., I put my case in bed. Then I give cod-liver oil, iron at need, full diet, and milk between meals. A long flannel bandage is put on at once rather tightly from the foot to the groin, and renewed twice a day. At the side of the limb a long splint is secured by a few turns of bandage. The splint should reach from axilla to ankle, the knee being bent a little, the heel secured from pressure. The splint and bandage are kept in place from two to four weeks, night and day; once a day, when these are removed, the leg is slowly and very moderately flexed and extended. This treatment is in constant use at the Infirmary for Nervous Disease. If it fails, it is usually because the malady is at first, or has become, spinal. The rationale of its use is, I think, clear. (1) The flannel bandage lessens the blood in the leg. (2) It protects the whole skin surface from the excitation of contacts. (3) The enforced immobility makes

all motion impossible, and so the two uses of the nerve cease. It is in splint and we get physiological rest. Since I have used the bandage the cumbersome use of ice along the nerve-track is less often required. At the close of the treatment, massage, used with extreme care, may hurry the recovery. If there are persistent pain points, mild surface cautery may be employed at last, but for all details as to how to get the patient afoot and keep his gains, as to use of ice at need, etc.—in a word, as to all minutiæ which make for success (indeed, very frequent and permanent success), I must refer you to the lecture in question. I might have said far more, for of the value of these means I am very sure, but I am talking to an audience of accomplished men, and I expect them to preach to themselves the sermons for which I but venture to furnish the texts.

This lecture has assumed the discursive character of a talk, and still relying on your indulgence, I venture to turn aside and ask your attention for a few minutes longer to some thoughts about pain, our constant foe, and especially to some forms of pain. I have often wondered why the great Being, who started us under certain laws upon the long career of reproduction, evolution, and self-modification, should have designed clearly a progress upward, and yet set in our way such limitations. We might all have had one eye for distance and one for near view; we might to some extent get on without the sense of pain; and that we could do with less of it is shown by the fact that some women remain for years without the pain sense. In one case of mine a hysterical paralytic recovered really useful health, and except herself and myself no one knows that she cannot be hurt by knife, or fire, or a blow. The interior organs still feel pain as usual. All other forms of skin sense are as keen as ever. This woman used to hurt or burn herself from want of care; now she has learned to take heed. I have seen many such, but only one other where the general health was as competent. She doubts now whether she would accept anew the natural condition of the pain sense. And do we really need it after it has served to give the educational sensory warnings of childhood? "Once," says my patient, "pain taught me to fear or avoid fire; now, warmth does this and suffices."

Among these annoying cases are a certain number due to strain. You are familiar with the acute pain which comes when a few little fibres having been torn of a sudden by the violent action of their fellows, a small hæmorrhage follows, and then, perhaps, long-lasting mischief. But this is not what I mean. A man who is out of condition, gouty, rheumatic, or on the down-hill of life, makes a prolonged and unusual muscular effort, as in rowing or in restraining unruly horses; or it is a woman not well, or who at her menstrual times lifts a patient day after day, or stands too long. At times the subject who suffers is an athlete over-trained, or with muscles over-used. As a result of such conditions we have a pain in the back which, in a few hours or by degrees, reaches a maximum of annoyance. Is it a disorder of muscle or of nerve-centre? The pain in the back gets a variety of labels as doctor after doctor treats it and fails in his predictions of success. The intellectual vanities of most of us must pretty often have been crippled, for a brief hour at least, by these cases of pain in the back; but that crippling recovers easily. I confess myself to a prophetic sense of defeat when a man, especially a man, tells me that he has old chronic pain in the back. Very often it will prove to be one of these rather mysterious evolutions, the final offspring of excessive taxation of that neuro-muscular group which is, of all others, in most constant use; in fact, never out of use except when we are at rest supine.

The ache is, in these cases of strain, at the pelvic attachments, and runs down into the sacral and gluteal region; a permanent but variable ache, with slight and rare tenderness in this place or that, increased by exertion and troubled by an east wind. Sometimes it needs careful study of a life-history to bring out the true cause, or causes, for most disorders have several parents. As it is worse for much exertion, so, too, is it worse on waking in the morning, and long continuance in one position seems for a time to increase the ache and the attendant stiffness. Such pain, the result of what I venture to call chronic strain, whether muscular or nervous, may be slight, or enduring and disabling; indeed may be incurable like some head strains, for you may strain nerve-cells as well as muscle-fibres. I use the word

strain for lack of one more descriptive. These cases run here and there, wear jackets, plasters, are burnt, and what not. I said that some can no man cure. If the case be that of a woman, those pathological scapegoats, the womb and ovaries, get the credit, and with this new sin upon them are sent forth into the wilderness of surgical enterprise, leaving the diagnostic sinner relieved and released from further mental exertion. For some men, indeed, the ovaries are veritable treasure-houses, on which they draw at will any amount of explanatory pathology.

You will pardon me if I say here that the causes of these distressful backaches escape detection, as a rule. Also if I urge that their early treatment by long rest and certain accessories gives the sole chance of permanent cure. Once this disorder is fully in possession, the incessancy of use of the parts concerned makes relief difficult. We treat these cases at the Infirmary by entire rest in bed for some weeks, by use of very hot water applied with hot wet mops to the back over a thick flannel. To use thrice a day, for half an hour, moist heat, as hot as can be borne, and not to blister is, let me assure you, not only most valuable, but needs a first-rate nurse. Then, once a day an hour's massage, mostly of the back, is added, and such general means as seem obviously needed. But let me say, too, the massage must be most searching, and the position of the back must be altered during its use so as to enable the rubber with thumb and finger-ends to reach and work at every part which can be got at. This triple means will cure some of these cases, and if used early, a good many; and then at last you may have to add, when the man gets up, if the case be an old one, some form of support or back splint.

The pathology of these cases is not very clear to me. But turn with me to a recent and very pertinent research, and it may help us to comprehend this and certain other unsolved problems. All function must depend on ganglionic accumulation of appropriated and specialised material, which is expended and altered during activity. Says Dr. C. T. Hodge in a recent and valuable essay, "All admit coarse visible changes as a result of a normal use of glandular cells. It is my purpose," he adds, "to see how far this is true of nerve ganglion-cells. What

difference is there between a cell long functionally stimulated and its fellows long at rest?" Dr. Hodge showed to the satisfaction of the American Physiological Society, two years ago, that after fatigue by excessive electric stimulation of the related nerves, the ganglion-cells undergo coarse changes. Thus these cells become smaller, the nucleus shrinks and grows jagged in outline, the surrounding protoplasm diminishes and loses materially its power to stain with osmic acid. Finally, numerous vacuoles appear in the spinal ganglion-cells, and in the brain-cells the shrinkage is still greater, and the pericellular lymph-spaces are more and more apparent.[1]

Once seen, these changes are such as easily enable one to say at a glance "This cell is tired; that cell is not." Dr. Hodge's first results were observed after electric stimulation, but now he has in press a paper I have read, in which he shows that such fatigue as arises from the flight of a bee or a bird, or the excessive tire of a chased fox, or the long journey of a homing pigeon, leave on the cells of spine and brain the most distinct signal-marks of exhausted protoplasm. Also excessive tire through muscle use is far more emphatic in its results than from electric stimulation. Even the nerve-fibres share in these results of work. The longer and the harder the work the plainer are these alterations, and the slower is the sequent repair. It takes twenty-four hours to repair five hours of electric stimulation. How easily one figures to oneself a state of too frequent and too severe work, repeated over and over before full repair is possible, as in time competent to carry the cells past the ready possibility of normal reparation.

See now what this means for us. You have at present only two words to describe the states of head or spine which follow excessive or difficult use of nerve, muscle, or mind. One man insists that the essential condition which should guide our therapeutics in these cases is cerebral anæmia; another, that it is cerebral congestion. There may be present the one or the other condition. Usually you do not know. Or, if there be too full or too empty vessels, are these not to be thought of as merely more or less mischievous accompaniments, or it may be, results? When we use imperfect eyes so as to fatigue to

[1] *American Journal of Psychology*, May 1889.

exhaustion the muscles of co-ordination or binocular relation, it seems probable that we must cause in their directing ganglionic cells states of tire with emphatic alterations. These by-and-by ring the signal-bell of pain, as worn-out tissues are apt to do soon or late. When Romberg wrote his much-used phrase, "Pain is the prayer of the nerves for healthy blood," he said a wise thing of limited value.

There are more things of which the nerves complain than of lack of normal diet; and one is the too perpetual demand on some imperfect part of the human machinery of which they make a part. The cry of pain seems to me, then, like the creak and squeal of disordered mechanism—more as if ill-used tissues had taken to profane language than like any form of prayer.

In the case of the eyes, if ganglionic exhaustion has gone beyond normal ease of repair, we have increasing frequency of headaches and sometimes one form of that singular disorder, permanent headache. There may be congestion or not. The guiding therapeutic thought should, I think, be some conception of ganglionic masses wearied past the possibility of easy restoration. During war we used to see men so worn out by marching that the whole system of musculation and innervation became paretic. In these acute asthenic states the normal time-table of repair was disobeyed, and six months were needed to rebuild the ruined tissues.

It seems to me a vast gain to be able to add to our explanatory statements some demonstrable, reasonable explanation besides congestion or anæmia; also, it is of use to have ocular evidence of coarse change in connexion with fatigue, and consequently with that readily-caused fatigue due to the effort to get normal vision with abnormal visual machinery. Then, too, Dr. Hodge's report encourages us to search anew and with confidence the neurasthenic organs in our rare *post-mortem* opportunities; assuredly we shall find obvious alterations; functional disease must always involve material tissue-change, just as does all normal function. If long continued it must end at last by causing further functional incapacities due to more and more definite and lasting structural alterations—as normal function results in tissue changes which are, so to speak, the ruts of habit.

The more we become materialists in our views of so-called

functional disease or disorder, the more likely are we to cure them. Take, for example, the various headaches of eye-strain. Once fully admit that long eye-strain involves tissue-change in the related ganglions, and we shall see that to glass correctly bad or imperfect eyes is not enough. And just here the oculist fails, if he is only an oculist. Certain headaches due to eye-strain continue despite his glasses. Then another man glasses the eye, and so on. What you really want is to correct the eyes, and to treat the over-wearied ganglia by putting the whole economy in the highest state of health. Then, indeed, and then only, are your glasses of much value; for there may be acquired states of a region, or of the whole body, in which the normal exercise of a healthy function is able to cause local or general distress; as when natural defæcation gives rise to fainting, or healthy digestion troubles an excitable heart or an irritable brain.

I linger over this because I so often see the oculist or the general practitioner disappointed in the therapeutic influence of glasses, where obviously the eye is the starting-point in the product of headache. It is best on the whole, in every such case, especially in the middle-aged, to explain that the glass rarely does its work suddenly, and that the habit of pain is apt to require added treatment which may be long and troublesome

Headaches, as I think, furnish very interesting illustrations as to the causative relation of lowered states of health to pain. A man with bad compound hypermetropic astigmatism reaches middle age without knowing that he has bad eyes. A wife's illness, a business strain, or what not, taxes him sorely; thence-forth he has headaches, easily relieved by glasses. A woman has some defects of the ocular muscles. Her first nursing seems to set up headaches. They are called anæmic. She is treated until her blood-count is normal. There is no relief. Glasses cure her. At times women with bad eyes suffer only at the menstrual time from headache, which is not alone a womb reflex, and not alone eye-strain, but one of those abominable combinations of which we see so many. Glasses sometimes stop these headaches by removing one factor from the equation of mischief, which is then no longer equal to pain.