THE CROONIAN LECTURES

ON

THE DIFFERENCE BETWEEN THE SEXES IN REGARD TO THE ASPECT AND TREATMENT OF DISEASE.

Delivered at the Royal College of Physicians of London.

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LECTURE II.

IN my first lecture on Wednesday, I concluded, after discussing the nature of the change called puberty, which was shown to be not so abrupt as generally supposed; was not dependent on uterus or ovaries entirely; but was the outcome of a primordial force acting on the general economy, but towards the end particularly, on the sexual organs and the nervous structures, directly and indirectly in sympathy with them, gradually becoming more intense at the time which we call puberty, till it culminated in the full development of the man and woman. It was noticed that it was much more rapid and strongly marked in woman than in man; that the ovaries regulated the menstrual function, setting up local hyperemia, as also general vascular and nervous excitement.

Hence we are drawn on in our thoughts to the causation of *anæmia* and *amenorrhœa*. I think I shall find most of you agreeing: 1. That with *anæmia* in the female, we very frequently find *amenorrhœa*; 2. That *anæmia*, however, is not necessarily attended by *amenorrhœa*. 3. We have already granted that, the ovaries being absent, we find *amenorrhœa* without any exception. Hence may we not fairly conclude that, where *amenorrhœa* exists in these *anæmic* cases, we have a negation or sedation of the ovarian stimulus; or, at any rate, a want of response in the nervous system, not sufficient to cause, that is to say, the local hyperæmia? Can we go still further and say that, in all cases of *amenorrhœa*, the ovaries existing, we have such a negation, although not caused by the *anæmic* state?

Is it not a fair conclusion to draw, also, that *anæmia* is one of the causes of *amenorrhœa*; that, the blood-supply being deficient, the maturation of the ovum, if it occur, is not sufficiently vigorous to cause the necessary action or excitement, and, as a rule, not sufficient for the process of ovulation? If this be so, we have an explanation why, generally, in these states we find sterility; howbeit, when conception does take place, as sometimes it does, most probably there is sufficient force to ovulate, but not to menstruate.

Anæmia about puberty is common to both sexes, though more so in the female. I should be inclined to call it "idiopathic", had that term not been given to a spontaneous form occurring in later life. But its causation is not very difficult to find. The demand on the system for the perfecting of the sex is great, and sometimes so abrupt that it is difficult for the system to meet it; a diminution of nourishment takes place from the nervous system and blood-producing organs, so that they cannot properly perform their functions. How much more severely does this act on the female than on the male, whose puberty is more gradual.

In cases of the *anæmia* of puberty, the cessation of the menses acts in a salutary way, instead of remaining to increase the exhaustion. Hence the unscientific treatment of those who, under this *anæmic* condition, endeavour by local stimuli to force their presence. Now, poverty of blood or *spanæmia*, of course, occurs from many other causes, all of an exhausting and depressing kind; and it is notorious how much more powerfully they act at the time of puberty than at any other time. I have used the word *anæmia* in a general sense, as the older term; *spanæmia* would indicate best the condition referred to above, because its origin is constitutional, and is more liable to be accompanied by, or, as I have suggested above, to produce *amenorrhœa*. Although severe blood-loss or true *anæmia* may, and not unfrequently does, produce *amenorrhœa* at first, still this symptom more quickly passes off, not being caused by a previous vice in the system. Still, from the effects of traumatic *anæmia* we can learn much; for, if it be very severe, it causes such depression that the symptoms very much correspond with those of spontaneous *anæmia*. Of course, it may be asked, If it be so, is not the absence of blood the sole cause; is not the deficiency of action of the blood-producers the cause of the *amenorrhœa*?

Granted; in part it undoubtedly is so, but subsequent to the depression which produced it.

Is *anæmia* of puberty common to both sexes, or is it entirely a female complaint? I have already stated my belief that it is found in both sexes, but much more frequently in the female. I have also endeavoured to show one reason for this; there are many others of an extraneous kind. Boys are brought up much more in open air and invigorating sports; generally girls are kept more in the house, have less free healthful exercise, and, as regards learning, are kept more continually at it. Their whole treatment is more enervating; and, I suppose, we shall most of us admit that the essence of this form of *anæmia* arises from a depressed vital force, or, taking all things into consideration, deficient action of the ganglionic centres.

But this is not peculiar to women. Perhaps the difference of opinion in this matter arises from the different discrimination of the causation. Sir W. Jenner, in his address before the Clinical Society, pointed out how often we were apt to look upon the disease which followed as the cause of the preceding cachexia, whereas it was the *cachectic* condition which permitted the occurrence of disease. And thus, a lad overgrown, pale, and *anæmic*, languid, dull, and fainting on slight overwork, goes on without medical assistance, gradually shows signs of phthisis; and we are apt to consider the phthisis the cause of the *cachectic* state, whereas it resulted from it. Nothing can show this better than the recovery of these chest-cases taken in time; we hear soon of the subsidence of the unhealthy appearance, and the general improvement of the local symptoms. Supposing this occurred in a girl in whom the menses had appeared, the attention of her friends would be called to the accompanying *amenorrhœa*, and advice taken about it.

In adult life, it is much more rare to see *anæmia* in either sex. It is uncommon in women, especially the married, apart from blood-loss. I have generally found those of them who have spontaneous *anæmia* to have had *anæmia* at puberty; and it is almost always easy to trace some distinctly depressing influence in these cases. In those extreme cases which have been called "idiopathic" or "pernicious" *anæmia*, both sexes share the disease; but the causation of these is probably the same as is found in the *anæmia* of puberty. Extreme blood-loss, although for the time recovered from, produces sometimes death, in the same manner as does the idiopathic form.

And thus we naturally are brought to the consideration of *chlorosis*. What is it? Is it a separate disease? Is it an *anæmic* person with a green or sallow complexion, the result of *cholæmia*; or is it quite a separate disease, with some other colouring matter in the blood? Authors so much differ, that it would be a bold thing on my part to venture to decide. Perhaps we would arrive nearer at its elucidation, if we were to argue thus. The *chlorotic* woman is *anæmic*; she is almost always *amenorrhœal* (although Trousseau says he has seen cases with *menorrhagia*—to this I shall again refer). These conditions are the effects of depression of the action of the ganglionic system. And thus, if this condition last long, it is not to be wondered at if the various vital organs should fail in their duty, and, like the ovary, be unable to accomplish their task. And thus, in the general system are retained materials that should have been evolved. For instance, the liver secretes little bile; the bowels are inactive, the accumulations causing annoyances and irritations; and thus are set up, in addition, a number of reflex symptoms and neuroses, which the weakened state of the patient renders her ill able to bear. Would it not be a wonder that, weakened and depressed in body, she should possess an active brain; or, if active under impulse, she would be able to sustain its exertion without exhaustion? And is it to be considered surprising that, these states existing, she will would possess its natural regulating control; but that, more or less released from its restraint, the emotional system would preponderate in force, ready as it always is to do in woman upon the least opportunity? Add to this yet one or more of the thousand stimuli which intensify the emotions, and let there be an hereditary fault in this direction, and we can perceive how readily an opportunity is given for the development of the hysterical paroxysm, and why these states should be often associated. With regard to the statement of Trousseau, that he had seen *chlorotic* cases with *menorrhagia*, it is quite in accordance with what I have before stated of *anæmia* with *amenorrhœa*, namely, that blood-loss produces the same secondary results as a defect in the manufacture of blood; and thus a condition of similar kind occurs, with this exception, that the vice in the system is not original, but induced. I have myself, within a few weeks, seen two excellent examples of this kind.

But does *chlorosis* exist in the male? Theoretically, upon consideration of the above argument, we see no objection to the supposition; though, practically, we seldom recognise its presence. Is this because we do not look for it? As the symptoms would be necessarily slighter in the male, they may be readily passed over. Still, I seem to remem-

ber many cases that have presented themselves, bearing a great similarity to this state, which, I am inclined to think, is hardly a distinct disease, but a condition superadded to anæmia. It must be borne in mind that the blood of the female is not so robust as that of the male, having less red corpuscles. This renders her somewhat more susceptible to anæmia and chloranæmia.

One cannot pass by this subject without alluding to Virchow's researches on chlorosis, in which he has apparently shown the frequent association of this disease with congenital contraction of the aorta. It is difficult to say how far one is the cause of the other. It is not difficult to understand how long depression, low arterial tension, and feeble heart would allow the aorta to remain somewhat below the normal size.

A well marked contrast between the male and female is known to all, in regard to a disease which stands in close relationship with the subjects just considered, namely, with anæmia and amenorrhœa: I mean the simple ulcer of the stomach. This complaint, although it occurs at all ages, yet is more frequent in the female than in the male; between twice and three times altogether; but at certain epochs much more. Thus Willich gives, out of 108 fatal and open ulcers, from the ages of 10 to 20, two in the male to thirteen in the female; from 20 to 30, nine males to twenty-one females; from 30 to 40, they are about equal, while from 40 to 50 the females exceed, in proportion of eight males to fifteen females; and from 50 to 60, there are two males to eight females—making it more than three times as frequent in the female up to the age of 30.

On inquiry into the influences which favour this dangerous condition, we find, amongst many, suppression of the menses, anæmia, and chlorosis to be very frequent. But certainly anæmia is not the only cause. For instance, after burns on the skin, it is not very unfrequently seen. I shall not attempt to follow the different views which have been expressed as to the pathogenesis of this disease; but I would venture to suggest that at least a help in the solution will be found in a careful consideration of the several differences in health and disease between the two sexes, and then comparing this with the variable states of ill health associated with this complaint.

We have already seen that about puberty, and for some period afterwards, there is a great demand on the vital powers, the effects of which are especially noticeable in the anæmic and chlorotic; we also know, but to this I have not yet alluded, that the walls of the blood-vessels are more fragile, and rupture more easily. We also know that the woman is more liable to local variations of vascular engorgement, dependent on her more mobile ganglionic and vaso-motor system. We all know that, in depressed nervous states, the resistance of the tissues to external influences is not so great as in perfect health; and it is possible that the lessening of this conservative force may be sufficient alone to permit the gastric juice to act on the mucous membrane. But, however this may be with other conditions, such as extravasation, it may be that the ulcer may be formed. Much, no doubt, has yet to be made out; but it is not difficult to suppose that the natural differences in nerve-force and firmness of tissue existing between man and woman render the latter more obnoxious to this trouble.

I hope you will pardon me, Mr. President and gentlemen, for considering it necessary to make some remarks upon that many-faced and apparently chaotic disease *Hysteria*. I would spare you if I could; but in such a subject as the differences of the sexes, it is impossible to do so. I, therefore, beg your tolerance while I get through my task.

At the outset, I must take exception to the term; for, if both sexes are liable to hysteria, how can it be applicable to the male? By this remark, you will perceive that I consider that what has been called "hysteria" in the female is to be found in the other sex. If so, then we must at once admit that the existence of the uterine organs is not an essential to the complaint. I know that with this most of you will agree. But what is hysteria? A refuge for the destitute—I mean destitute doctors. Is it not, in actual practice, a convenient term for any peculiar and apparently causeless symptom? Is it not a term used when, after many fruitless trials, we find ourselves baulked by the inherent difficulty of the research, or, possibly, when we are languid and indolent?

Otherwise, how are we to account for such terms as "hysterical peritonitis", "hysterical convulsions" of the pregnant, "hysterical pains", "hysterical vomiting", and a hundred other such phrases? No doubt it is convenient to have a single term to include a class of symptoms; but it gives rise to endless difficulties when this term is not actually correct, or very ill-defined.

But, what is it that we are talking about? Are those cases of "hysteria", where we find, about the period of puberty and a little afterwards, particularly in girls, actions approaching insanity, false accusations, tricks to deceive and damage, swallowing pins, raising blisters deceit-

fully, and a number of other similar freaks? Are not these forms of mental perversion mild forms of insanity, associated of course often with emotional excitability and deficiency of control; and then mis-called "hysteria"?

Are those forms of pseudo-paralysis to be rightly called "hysterical paralysis", which, in a considerable number, are doubtless associated with mental peculiarity or low conditions of the mental powers, and an oversensitive emotional nature? Is it not rather a paralysis of the will to move, in girls and women, whose force of will never was great, but, when something has occurred to make it painful to walk, or languor has been indulged, and the will never fairly exerted, until after a time the power to will fails? I have seen such cases delicately tutored by my friend and colleague and your Censor, Dr. Wilks, until gradually the power has returned. I have seen him taking their arm, and, with true maternal care, teaching them to walk as they were once taught in infancy. Many of these patients wish to attract sympathy, and for this reason do not or will not will, and gradually the will is lost.

The whole subject of true functional paralysis is at present so little understood, that we shall be wise if we merely note the associations with which it is blended. The condition would not exist without some general vital depression preceding; a state also sure sooner or later to permit the preponderance of the emotional system, hyperæsthesia, etc.

As an instance of functional paralysis, I may quote a case of a young married woman of the least hysterical character possible. She had had for a month or so complete paraplegia. At the time of my visit, this still existed with most complete anæsthesia; she had no power over the sphincter ani, and the urine dribbled away. I could run pins into her leg without her being aware. Her history was this. She had suckled her first child for a year, had fallen pregnant during the nursing, and was already three months advanced; consequently she was very anæmic and weak. In three days, she was quite well.

Then, are we to include in "hysteria" patients suffering from pains in various parts, and of which much complaint, and perhaps exaggeration, is made? Why should we denominate these as "hysterical"? and, because no lesion can be found to explain the pain and it disappears suddenly, why are we to call it "fanciful" and "hysterical"? If, by this term we mean to express disturbance of the nervous structures, then the word is a misnomer, because it occurs in the whole race under conditions which, although they may develop the emotional paroxysms, by no means necessarily do so, and are often not dependent on an uterus. Till we have learnt to discard the term "hysteria", as applied to the various reflex pains and to simple hyperæsthesia, we shall fail to seek for and find the cause of the disturbance whereof the patient complains. For I desire emphatically to lay it down as a cardinal rule, that, when pain is complained of, there is a definite cause for it, centric, local, or reflex. The pain may have an exaggerated value in the patient's mind; and, if it persist long, it may become so objective that the patient may observe it even to the exclusion of other pains or influences; yet, it is our duty as medical practitioners to seek that cause.

If a patient suffering from anæmia or chlorosis have facial neuralgia, it is not called hysterical, because it is a well-recognised and frequent malady; and even were she emotionally sensitive, we should not account it hysterical. If this patient at the same time have a pain in some part of the body not usually complained of, and there be a difficulty in finding a definite lesion, it is put down then as an "hysterical" one; and generally the patient would be called "hysterical". Let us cast off these cloaks of ignorance and indolence. It behoves us to find out the cause; and, as sometimes the cause of the reflex pain is in a locality different from ordinary, it will require much research to detect it. Still, we ought to bear in mind the well known rule in physics—"no effect without a cause".

There are doubtless some difficulties attending these examinations; because, when a pain taking its origin in a slight cause has existed a long time, besides the prominence it attains in the mind of the patient, it causes also an extension of sensitiveness to the general nervous system, and thus in its turn gives rise to various neuralgias. Besides this, also, there is a change set up in the centres themselves, which remain sensitive after the cure of the original cause; and, even if this sensitiveness be cured, it is relit upon the slightest cause much more quickly than it was at first.

Nothing shows this better than the effect of irritation of any one of the pelvic organs in a woman. If either the bladder, rectum, or uterus be the subject of abrasions or ulcerations, the back over the sacrum is more or less complained of; and, if the hand touch the surface, it is more sensitive at a certain part than others, showing that there is some change in the state of the nerves of the skin. But the other organs complain of pain and tenesmus, so that it is often difficult in a long-standing case to discover the starting-point; and then, after the erring part has been put into a sound state, the pain still remains, though it

gradually subsides under anodyne and tonic treatment. Thus, many cases are overtreated, although the original state required treatment, this being kept up beyond the real cure, because the patient was still feeling pain.

Now, we will suppose a patient of naturally sensitive emotional temperament to have an affection of this kind for a year or two. We well know that, especially if the uterus be involved primarily, the stomach will sympathise by reflex irritation of the sympathetic nerves; and dyspepsia in its varieties will arrive, and even vomiting. And thus we must conclude that the nerves of the stomach are, in their way, as tender and irritated as those of the skin over the sacrum. An exaggerated instance of this is seen often in pregnancy; and then, the greater portions of the ganglionic system being already in a state of irritation, it is not difficult to understand that other organs in their turn become troubled, and headache, hypochondriasis, palpitations, etc., follow in their wake. The whole body in consequence suffers; for, the stomach and digestive organs failing duty, there must ensue debility; and thus the emotions assert superiority, and paroxysms of hysteria are not remote.

The distress of such a condition is often increased, in cases of uterine abrasions and hypertrophy, by the hæmorrhages frequently attending them; and thus anæmia intensifies the liability to neurosis and its sequents.

Of course, I do not deny that the state of the nervous centres themselves, both cerebro-spinal and sympathetic, may give rise to the same phenomena as when derived from eccentric irritation. Mental depression, impoverishment, anxiety, etc., or actual disease of the centres, may doubtless set up such troubles as we have been considering; but I think that, in the large majority of cases, there is a reflex cause to be found after careful observation.

In our research after it, we must bear in mind that it may seem to us, who are in health, slight; and that pain, depression, exhaustion, etc., will magnify its power of annoyance. The study of these matters has been carried on by the male sex, most of them in good health, who personally can but slightly appreciate the susceptibility of the female economy. These phenomena have been viewed rather from the masculine than the feminine aspect; and some have gone so far as to deny these well-known facts. Yet one might appeal to those who have suffered severe and chronic ailments, whether the train of symptoms just narrated have not a reality for all.

Supposing, then, a train of symptoms similar to those instanced from uterine or rectal irritation to arise from abrasion or irritation of the stomach, ultimately reducing the patient to a highly sensitive state with dysæsthesia of many kinds, discomforts, and exaggerated complaints, so that finally the whole balance of the reason and emotions becomes disturbed; can we in fairness call the *whole* of such a state "hysteria"? But it surely cannot be called a disease peculiar to woman. With less emotional disturbance and more rational force the man suffers, and then we call it dyspepsia in its milder forms; but, supposing the man had been previously depressed by overwork, anxieties, watchings—added to, perhaps, by tea-drinking to excess—then, if he were overanxious about himself, and overvalued the importance of his trouble, he would be called an hypochondriac.

But there is a reality in the pain; there is a reality in the causation; a man in this state will, on excitement, soon show the susceptibilities of his emotional system.

Yet one more instance. It is a very common thing for women to complain of pain in the groins; and some put it down to ovarian irritation or ovarialgia. If it continue a long time, the patient is worried about it, and in her mind it attains a prominence it does not deserve as regards danger. But it is much increased at monthly epochs, when it may be very severe for a few hours or days. After a time, the general system is disturbed, there are neurotic pains and aches; more emotional disturbance, and the stomach begins to complain, and even vomiting to occur. If this go on for one or two years, gradually increasing in severity, then we find globus hystericus, hysterical paroxysms, and an instability of the balance between the reason and emotions; and, if the patient be originally of firm will, she may preserve a moderate appearance of quiet, but otherwise there will be the usual phenomena of the hysterical state.

But is this only irritation of the ovary? In the vast majority, there is some definite trouble. Look at the function of the ovary; how many Graafian follicles are maturing in various stages; see how dense a tissue each has to penetrate; consider the congestion, beginning some days before the bursting, and then the actual extrusion of the ovum with a drop of blood, or sometimes more, into the peritoneum, even if taken up well by the Fallopian tube; supposing the tunica albuginea to be unusually dense, or the Fallopian tube prevented by adhesions from grasping the ovum, then the latter falls into the peritoneal

cavity. And does it require much imagination to conceive that pain, excitement, and reflex phenomena should be present to develop by reiteration the hysterical phenomena?

But ought we not to call this in all its stages hysteria? In some cases, these latter symptoms would never be developed; and thus we can only say that hysteria may arise out of this as out of other irritations. Again, suppose that previously the whole nervous and general system were depressed by the many troubles of life, then we should find that the case would proceed with greater rapidity.

May I not say, with your acquiescence, that any source of irritation in any organ or part of the body existing and continuing, other parts in nervous relationship with it are influenced, till a condition of hyperæsthesia, dysæsthesia, and overaction ensues, tending in various ways to reduce the patient; so that, sooner or later, there is a greater prominence given to the emotional system, which may or may not be subject to the control of the will?

[To be continued.]

THE GOULSTONIAN LECTURES

ON

PHARMACOLOGY AND ITS RELATION TO THERAPEUTICS.

Delivered at the Royal College of Physicians, London.

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LECTURE III.

In my last lecture, I described some examples of the method by which medicine is at present advancing, and to-day I purpose to enumerate some of the gains already achieved by the employment of this method. These are fourfold in their character. We have new remedies. We are taught how to use our old remedies. We learn what to do. We learn what to avoid. We discover that the action of *casca* on the heart and vessels indicates it as an useful remedy in defective circulation. At the same time, we are cautioned that the drug may disturb the digestion and cause an unpleasant surprise if carelessly given.

If *casca* is to be beneficial in one form of heart-disease, why not in another? If it is to do good in mitral, why not in aortic, incompetence?

To answer these questions, let us consider the pathology of the disease. During the normal condition of the cardiac diastole, the left ventricle usually receives only the blood which pours into it from the auricle. When the aortic valves are incompetent, the ventricle receives in addition the blood which flows back from the aorta. It thus becomes filled to a much greater extent than usual. The quantity of blood, therefore, which is propelled by it into the arterial system by each systole is very large, so that the arteries become tense. During the diastole, the blood which ought to be retained in the aorta by the sigmoid valves is allowed to flow backwards into the ventricle; so that the arterial system may be compared to a vessel open at both ends—viz., at the capillaries and at the heart—instead of at one end only, as in health. It thus becomes much emptier during the heart's pause than it should be. The condition, indeed, is comparable to that of a man from whose artery a jet is allowed to flow between every pulsation, only that the blood flows back into the heart instead of out of the body. The differences between the tension of the arteries in their full and empty states are thus very much greater than in the normal condition; and we get the full and bounding pulse first recognised by Corrigan as characteristic of the valvular lesion we are now considering. We all know how difficult it is to break a cord by steady strain, and how easy by a sudden jerk. The arteries in aortic regurgitation are subjected to a greater strain than usual by the great variations in tension which occur. Supposing, then, that we were to increase the force of the heart by such drugs as digitalis and *casca*, we would increase the strain upon the arteries. But, besides the increase in the force of the heart, these remedies would make it pulsate more slowly, and more time would thus be allowed for the blood to flow into it both from the auricles and from the aorta. The ventricle would thus become fuller than usual; a greater volume of blood would be poured into the arteries at each beat; and the tension would be increased by the size of the wave, as well as by the rapidity of its pro-