Croonian Lectures

ON THE

LOCALISATION OF DISEASE.

DELIVERED BEFORE THE

ROYAL COLLEGE OF PHYSICIANS.

BY

EDWARD H. SIEVEKING, M.D.,

PHYSICIAN TO H.R.H. THE PRINCE OF WALES, AND TO ST. MARY'S HOSPITAL; PRESIDENT OF THE METROPOLITAN COUNTIES BRANCH OF THE BRITISH MEDICAL ASSOCIATION; ETC.

LECTURE II. (*Concluded.*)

AFTER this digression, *revenons à nos moutons*—the diseases of individual organs of the body. Our knowledge of the affections of the pancreas and spleen is still of the crudest kind. When we meet with oily dejections, we believe the former; when the microscope exhibits an unusual number of white corpuscles, we generally find the latter seriously disorganised. But we are not yet in a position to trace the diseases of these organs even to as early a point as we can those of other organs of the body. So far as we are acquainted with them, they occur only as expressions of deep-seated perversions of nutrition; and we possess, as yet, no means by which to recognise with certainty any early deviation in them from the normal standard, because we are unable to measure their functional activity in health. Time and space forbid our dwelling upon pancreatic and splenic disease; the more so as we should have to deal with hypothetical conditions, rather than recognised pathological data. If we were to enter upon uterine pathology, we should be in danger of treading upon a ground involving the risk, unnecessary for the present purpose, of hurting personal susceptibilities; otherwise it would suggest many important and interesting topics connected with our present argument. There are, however, other organs of the body, and many tissues, which offer well-marked illustrations of the doctrine I am seeking to enforce. Pathological, if not anatomical association, naturally takes us back from the kidneys, which have last occupied our attention at any length, to the very centre of organic life—the heart. How does disease manifest itself here? Is there any cardiac disease which may justly be termed a primary affection of the whole or any of the parts that constitute that most marvellous mechanism? What has been the great impulse to the study of cardiac disease, but the discovery that it is associated with certain states of malnutrition of a diathetic character? Anæmia, fatty degeneration, rheumatism, atheromatous degeneration, are a few of the prominent forms of malnutrition which, under certain circumstances, localise themselves in the heart, and are there recognised during life by certain physical signs; or, as is often the case, they do not manifest themselves locally until the effects are discovered on

the *post mortem* table. The heart affords the most marked instance to be found, in the study of disease, of the protective power of the economy on the one hand, and the absence of that exact concordance between symptoms and actual derangement on the other, which *à priori* reasoning might have led us to anticipate. And, doubtless, it is a wise provision that comparatively trifling ailments often excite great alarm, while more serious maladies cause little apprehension in the affected person. But that does not alter the physician's duty to trace out cause and effect to their first origin, so as to obviate both the early functional disorder and the later organic degeneration. The experiments made by Dr. B. W. Richardson on the synthesis of disease illustrate well how at least one class of cardiac disorders is produced. The effects produced by his injections of lactic acid into the body of animals have been followed by results so closely resembling those due to rheumatic fever, that it is difficult to resist the conclusion that in both cases we have to do with an analogous mode of causation. But, whether or not we may accept Dr. Richardson's synthetic proofs as final, the whole course of rheumatic fever, with its more or less permanent effects upon the heart, sufficiently supports the present argument, in so far as it is essentially and primarily a disease of malnutrition and its local manifestations, accidental, or, at all events, non-essential sequelæ. If a friend in apparent health be suddenly stricken with death after a little extra fatigue or unusual emotion, and we find that the left ventricle of the heart has been ruptured, this appears unaccountable and anomalous, unless we bring a portion of this cardiac tissue under our microscope, and find, in the substitution of oily molecules for the sarcolemma, an indication of long anterior malnutrition of the heart, which the further study of analogous cases assures us is connected with general malassimilation, as evidenced by a close review of the past history, and a careful examination of other tissues and organs which prove to be involved in a similar degeneration. Medically speaking, such a termination appears an euthanasia; and, without entering upon a teleological argument, we cannot forbear remarking, that we have often been struck with the comparative freedom from suffering and anxiety in diseases that have a tendency to death, while the pain of anticipated evil so often harasses those whose maladies are of a trifling and removable character. Fear as well as pain often serve, like the cur that barks at the stranger, to guard and warn; but, like the cur, they often mistake a friend for a thief.

If we take the case of angina, and study it in nature or in that exquisite portraiture of disease given in the lectures of our President, we find an excellent illustration of the successive advances made in medical science—how, from the mere symptom of pain and dyspnoea, for which only the vaguest explanation could be assigned, we have gradually arrived at an understanding of a very complex series of changes indicating deep-seated nutritive derangement. We may be still compelled to admit, with Dr. Watson, that "very rare" cases occur in which no disease of the heart has been detected, because our range of vision or our methods are defective; still we are now satisfied that, in the great majority of cases, we shall find appreciable organic mischief, whether it be due to former rheumatic disease, to a gouty diathesis, or

to irregular and imperfect nutrition of some other form. How intimately the nutrition of the different tissues of the heart is associated, is best proved by the more or less permanent influence exerted by pericarditis upon the muscular tissue. Dr. Watson has himself pointed out how, although morbid conditions of the investing and lining membrane of the heart do not always compromise the life of the patient immediately, they are fatal at length in ninety-nine cases out of a hundred, through the alterations which they induce in the adjoining muscular tissue. These alterations, as Virchow demonstrated in 1858, are of a degenerative character, advancing, in the case of certain forms of pericarditis, from without inwards. It is not improbable that many cases of fatty degeneration, which now-a-days is so common a source of debility and death, may be brought about in this manner. At all events, these facts indicate how slow we must be, when we deal with a morbid condition, not to regard it as a primary and substantial form of disease, as persevering research generally leads us to an earlier and simpler form of derangement.

I do not willingly quit the trunk without saying something of phthisis in connexion with the subject under consideration. Here we have a local manifestation of nutritive derangement, which, perhaps more than any other of the murderous diseases that decimate our countrymen, is due to the influences of modern civilised life. The *Epidemics of Hippocrates* give a brief account of its chief symptoms; but the open-air life of his cotemporaries, and their windowless houses, obviated at least one of the great checks to a healthy tissue-metamorphosis—insufficient oxygenation of the blood. We have it in evidence that people may live in great poverty, and in every way but poorly supplied with the necessities of life, and phthisis shall not invade their homes, so long as this imperfect construction shall allow the winds of heaven access to them. The remarkable immunity of the Western Highlander from pulmonary consumption, so elaborately demonstrated by my friend Dr. Morgan of Manchester, ceases when you take him out of his peat shanty and put him into a stone house with doors and windows. But, whatever the relative fatality of the disease in ancient and modern times, all observers appear agreed that the disease is mainly one of defective nutrition—arrested metamorphosis of the tissues—finding its local expression generally in that organ which in the individual claimed a special development of energy, calling out, like Tennyson's weary soul :

"'Tis life whereof our nerves are scant;
Oh life, not death, for which we pant;
More life and fuller that we want."

So much is phthisis regarded by some as a disease of nutrition, that its earliest seat is placed in the stomach, and dyspepsia is stated to be its first stage. In principle I agree with these observers, though I would differ from them as to the fact that what is commonly called dyspepsia is by any means a uniform forerunner of pulmonary tubercle. The principle is this, that, long before the actual formation of the tubercular deposit, there is what has been termed by one of our very learned and energetic Fellows, Dr. E. Smith, a pretubercular stage, in which the vital powers are sapped at their very root by an imperfect depuration of the blood and an

irregular or vitiated supply of the elements necessary for the support of the healthy tissues. Place such a patient under circumstances enabling him to meet both requirements—namely, to burn off the accumulating waste material, and to replace it by normal elements—and you get rid not only of your pretubercular, but also of your tubercular stages, and cure your patients as effectually as we can cure any disease. I for one have no hesitation in affirming the curability of phthisis, not from any theoretical considerations, but from what I have seen very often and almost in all ages, both during life and after its close. But I should have scant hope of such a result, were the treatment directed solely to the removal of a local irritation, though that irritation might justify remedial interference on account of the reflex injury accruing to the patient from that source. The nutritive derangement that leads to phthisis lies at the bottom of so many morbid states, localised in other organs besides the lungs, that a more clear and precise recognition of its earliest phases is most essential. An universal sympathy prevails; and as, in advanced tubercular consumption, all the tissues waste, so, in the earlier stages, the taint that leads to the fatal issue, if unchecked, may become so prominent in the stomach, the heart, the ovaries, the brain, as to completely mask the real issue. This may serve as one of many instances that may be adduced to show the injury done by specialism to the cause of scientific medicine. The speciality divides the body into a number of separate portions, which are apt to be regarded as independent of one another; whereas the intimacy of correspondence between all the different parts is so great, that the greatest danger is apt to result from the physician of one organ ignoring its fellow-labourers.

Modern scientific inquiry has placed the diseases of the cerebro-spinal system, so far as I understand them, on precisely the same footing as that which prevails in regard to other organs. The names of the different morbid conditions of the brain and cord may have been multiplied, because pathological anatomy has shown us that a greater variety of effects are produced by the fundamental elements of disease, than our predecessors were able to appreciate; but for all that our intimate knowledge of these various conditions is simplified, because, the more we know of them, the more the essentiality of the different morbid conditions disappears and their symptomatic character becomes more prominent; that is to say, we find that, as in the parts of the body previously discussed, a modification of nutrition precedes and underlies all spinal and cerebral disease; and it is in this modification that the unity of disease exists.

The surgeon of old who neglected to bleed his patient suffering from an apoplectic condition, acted wrongly, both scientifically and morally. Scientifically, because science taught him to regard all apoplexy as resulting from local congestion and general plethora; morally, because his convictions taught him to believe in the venesection as the only means by which such plethora could be reduced. He knew nothing of heart-disease or renal degeneration in relation to cerebral disorder, and still less of the nutritive perversions which in the first instance led to them. Red or white softening of the brain-tissue, embolism, fatty or atheromatous degeneration of the cerebral arteries, were to him hidden processes, and

his doctrine was, that sudden and violent symptoms must require an analogous procedure of cure, forgetting that the greater the disturbance in the balance of the forces the greater the call for extreme nicety in their adjustment to restore the normal condition. Whatever nosological entity we may examine individually in the nervous system, we are always reduced to the same conclusion—there is some long antecedent nutritive derangement, some arrest or change in the normal metamorphosis of the tissues, to which we are able to refer it with as much certainty as we can do anything in medicine. These antecedents the ancient surgeon or physician could not appreciate, because the means of doing so were not at his disposal. He saw a great conflagration, and concluded that the most violent measures must be necessary to extinguish it. Hence he established the vicious doctrine, *Melius anceps remedium, quam nullum*. The antecedent nutritive changes necessarily vary according to circumstances and habits of the individual; the medical man no longer has one rule of treatment, but seeks for the exact nature of the fundamental and consecutive derangement in order to arrest the disease. The ancient routine resembled that of a watchmaker who always assumes that when watches go wrong, the mainspring is too powerful and wants toning down; we believe that the modern system may be compared to the clever mechanic who, having no preconceived theory on the subject of horological irregularity, searches for its causes in every part and constituent until they are discovered.

Whether we look to what are regarded as local diseases of the nervous system or as general affections, we find equally an antecedent nutritive derangement, often of very long date. The date here, as in other disease, is often traceable to a point long anterior even to the birth of the patient, if there be any truth in the doctrine of hereditary influence. For though the exact ratio of an hereditary influence may be difficult to settle in a particular case, it seems as impossible to avoid the conclusion, that morbid taints or impressions are sent on from parent to child, as it would be to deny the transmission of a resemblance in feature and character. To allude but to a single and insuperable difficulty, how would it ever be possible to ascertain the influence, alluded to, and made a great point of, by Goethe, in his *Wahlverwandschaften*, which may be exerted by mental emotion affecting parents during the act of sexual congress upon their future offspring? We cannot estimate all the elements upon which hereditary influences depend, owing to the limits of our opportunities and powers; but the result is too palpable to escape the most superficial observer.

Under the term general diseases of the nervous system, I would class such conditions as hysteria, chorea, paralysis agitans, tremors, neuralgia, epilepsy, anæsthesiæ, hyperæsthesiæ, and the like. It can scarcely be affirmed that any of these have an independent existence; that they occur in any human being without being preceded by some nutritive derangement, to which, even in the present state of science, we could give a more or less definite name. My esteemed colleague, Dr. Handfield Jones (*Clinical Observations on Functional Nervous Disorders*, p. 482), has most strenuously advocated the view, that many of the indefinite nerve-derangements which meet us at every turn are a masked form

of ague, or the expression of a minute quantity of miasm-poison taken into the system. I do not desire to dwell upon his theory; but it is quite manifest from his facts and arguments, that he holds the diseases in question to be the sequelæ of a deep-seated nutritive derangement affecting the vigour and tone of the tissues primarily, and not themselves the primary disorder.

I should weary you were I to bring forward, as could easily be done to almost any extent, illustrative cases of disease to enforce my argument. Your own extensive knowledge will readily supply the necessary facts to test it by. I might appeal to the dermatologist to tell us of the nutritive derangements that precede and cause and accompany the many affections of the skin, that are but too often cured to the lasting detriment of the patient, when their origin in the systemic nutrition is overlooked. I might go to high surgical authorities, and ask them to explain the origin of the great majority of the local affections that come under their notice, confident that malnutrition in one or other of its phases would appear in all their answers. Go to the ophthalmologist, and inquire how often the eye is diseased solely because of direct external injury, and how often the catarrh, the rheumatism, the gout, the albuminuria, the fatty degeneration, that has hold of the system, forms the substratum of the eyes' ailments.

Why the general disorder finds a local expression, is a question by itself. The answer is given in the great works that discuss the details of individual disease, so far as it can be given in the present aspect of science. We require, however, to know much more and more definitely the particulars of this relation; possibly the researches involved in the therapeutical action of remedies may aid us; at all events, in my next lecture, I propose to examine in how far our present knowledge of therapeutics lends countenance to the argument I have ventured, but too feebly and inadequately, to lay before you.

DECLINE OF THE CATTLE-PLAGUE. The ravages of this disease have happily abated very materially. The effect of the legislation of February has been, that the weekly number of attacks has been diminished to the extent of three-fourths, viz., from 18,356 to 4,653 in the comparatively short space of six weeks. It may be hoped that a continuance of the same repressive policy will have nearly annihilated the disease by the end of this month. At the close of October the number of beasts which had died from the disease was 7,912; at the close of November, 16,384; at the close of December, 41,491; at the close of January, 81,386; at the close of February, 117,664; and at the close of March, 121,571. The actual mortality in March would appear to have been thus reduced to 3,907. The number killed at the close of October was 6,866; at the close of November, 10,061; at the close of December, 13,931; at the close of January, 17,368; at the close of February, 26,135; and at the close of March, 48,508. The number killed in March would thus seem to have been 22,373, so that the pole-axe removed nearly as many beasts last month, as had been slaughtered previously since the commencement of the disease. The number which had recovered was, at the close of October, 848; at the close of November, 2,420; at the close of December, 7,045; at the close of January, 16,055; at the close of February, 26,106; and at the close of March, 29,741.