THE PATHOLOGY, DIAGNOSIS, AND TREATMENT OF CARDIAC DISEASES.

By W. O. MARKHAM, M.D., F.R.C.P., Physician to St. Mary's Hospital, London.

INTRODUCTORY REMARKS.

THE study of pathological anatomy—that is to say, the study of the diseased conditions of the different organs and parts of the body as presented to us by the knife of the anatomist after death—is necessarily one of the stepping-stones over which we must pass to arrive at a perfect understanding of diseased processes. But the physician soon learns that a knowledge of the nature of diseases is not to be obtained by the mere study of the structural changes of the body. Diseases, as he knows them, are not simple but complicated processes, involving a chain, and often a long chain, of actions, which run the one into the other; and of these actions, the pathological anatomist seizes only those links which come last or late in the series. Such structural changes, then, do not represent the essence, the *primum mobile*, of diseases; they are simply the consequences ensuing from the action of causes, which operated in the body anteriorly to them. Thus, the ulcerated intestinal glands of typhoid fever; the tubercular deposits of phthisis; the ecchymoses of purpura; the pustules of small-pox; the arthritis and pericarditis of rheumatic fever—these are not the *essential* diseases which, as physician, he is called upon to treat. They are neither more nor less than the consequences of certain antecedent actions, whose nature has hitherto eluded our grasp.

Pathology, then, in its true and philosophic sense, is something far beyond a mere knowledge of pathological anatomy. Diseases must be contemplated in their living manifestations; in the derangement of functions which they occasion during life; as well as in structural alterations of the body observed after death. There is a physiology of disease as well as of health—a pathological physiology; and a knowledge of the disordered actions of organs is as essential to the pathologist as is a knowledge of their natural actions to the physiologist. There are many diseases, indeed, of whose pathology we know nothing, beyond what we learn of them through certain disturbances of function manifested during life. What has the most scrupulous investigation made after death yet taught us of the pathology of tetanus, of hydrophobia, or of epilepsy? All that we know of the pathology of these and of many other diseases is derived entirely from the observation of those striking disorders of functions which characterise such diseases during life. Thus pathology comprises a knowledge of disordered functions, as well as of dead anatomical facts.

It is even more than this. By a process of legitimate reasoning, it takes cognisance of disease lying dormant in the body, and which has not yet manifested itself, either through disorder of function, or through change of structure. Hereditary diseases are of this sort. Here there exists an invisible taint, so to speak, inherent in the body; and from the moment when the germ commenced its first evolutions in the womb. The period of the incubation of disease, again, is a pathological period in the life of the individual affected with it. Though neither disorder of function, nor structural change indicate the existence of disease, still, reason surely tells us that disease is there in the body, quietly working, gradually unfolding, and coming to maturity and complete development.

A clear recognition of these facts gives us a key to a right estimate of the uses of pathological anatomy, to the physician as *a curer of diseases*. We are all now-a-days so keenly engaged in the observing and recording of material facts that we are apt to forget how limited is the information which pathological anatomy can give us of the nature of diseases; and of how limited service it is to the physician (in a positive sense) as a guide to him in the practical application of his remedies in their cure. The physiologist might regard the microscopic qualities of a nerve-tube, of a muscular fibrilla, or of a gland cell for a century, and yet could never, from their visible qualities, gather the smallest inkling of the functions they subserve in the animal economy. And just so the pathologist. He may make himself thoroughly master of all the chemical and physical properties of tubercle, and of the different anatomical changes, occasioned by its presence in the body; but what does all this mere *anatomical* knowledge avail him, as a key to the essence of the disease, or as indicative of the curative agencies requisite to combat it? What do all those typical specimens of arthritic and of endocardial and pericardial inflammations, in their different stages, displayed in our museum, teach us of the real nature of the disease, and of the peculiar remedies requisite in the cure of acute rheumatism? In the dead-house we learn what parts are injured by the disease, and how they are injured; but the dead-house does not teach us the nature of the disease which effects those injuries, and therefore does not explain to us the value and uses of our remedial agents. Our therapeutical knowledge, at present, rests almost wholly upon what we observe of the effects of remedies upon the living body.*

But if pathology has enabled us to make but small advances towards a *positive* cure of diseases; it has, in one sense, advanced the progress of our art admirably. It is something, at all events, that the mists and prejudices, which have heretofore obscured the face of medicine, should have been cleared away. We have begun to learn (and the lesson is being more widely spread every day) the bounds and limits of our powers as curers of diseases—to learn what we can, and what we cannot do. We cease to arrogate to ourselves those kind offices, which nature, not our art, performs. Our forefathers thought, through their remedies, that they had a power over, and could control, and remedy disease after a fashion, which we know is impossible. No blame, indeed, to them; for they had not the means of knowledge which has led us to these better things. Instead of *jugulating* inflammatory diseases—of evacuating morbific principles at the mouth of a vein—we have learnt to guide the patient gently to his cure, through the inevitable *via mala* of diseased processes. If we have gained nothing more than the being rid of the vicious theories which have hitherto directed—and, of course, viciously directed—the hand of the practitioner to his work, we have gained immensely. Error was an essential and necessary associate of the practice of former days; but it is not so now. Our errors are voluntary errors, for which we are responsible. We can mark where positive knowledge ends, and can estimate at their proper value the theories and practices which we follow out in the cure of diseases. The line between that which is demonstrated, and that which is hypothetical, is clearly and well defined. And it is just this very knowledge of its fallibility—this philosophic estimate of its actual powers over disease—which distinguishes rational medicine from barren empiricism.

Pathology, thus considered, points out two special objects for the attention of the physician in this treatment of diseases. These are: the local injuries effected by the disease, the obstructions to the performance of the functions of parts, and the agent itself which occasions those injuries. It is the business of his art to administer, if so it may be, to both these evils, which are essentially different in their nature; though in past days too often confounded together.

Now, as regards the last of them—the essential cause of disease—it is manifest that until pathology enables us to define its actual nature in any given case, our treatment of it must be empirical.

In such case, experience alone can guide us. We give a remedy, chronicle a result, and thence deduce a line of treatment. Now, men have appealed to their experience in all ages of medicine, and still appeal to their experience, as the test of the propriety of their practice; and hence it becomes of importance that these experiences, which, as we find, daily lead observers to diametrically opposite conclusions, should themselves be subjected to some touchstone. The father of medicine was himself forced to denounce the fallacies of experience —*experientia fallax*; and it may be truly asserted that there is no more grievous obstruction to the true progress of rational therapeutics than the confident trust which, as individuals, we place in the results of our own personal observation. We are all too apt to forget that the facts about which experience is exercised in medicine are most difficult of right appreciation. Surely it is very illogical to accept as proven, facts concerning which the opinions of equally experienced observers are widely

* I could, and so could any one, if it were worth the while, give abundant proofs of the false practices in therapeutics which have from time to time, during these late years, been engendered by this too narrowed observation of diseases. The remedy has, in such cases, been suggested by and directed to the anatomical or chemical changes met with in the body. The cause provoking those changes being forgotten.

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different. That which alone can give to a particular fact in the treatment of disease the stamp of genuine value, is the wide and uncontradicted assertion of its truth by competent observers.

A true experience in medicine, I would define as the result which is arrived at through the observation of numerous fitting observers; who, after due investigation, arrive each at a like conclusion—the conclusion not being contradicted by the observation of other equally capable observers. Whenever serious discordance of opinion exists concerning the influence of a remedy over disease, wisdom would lead us to infer that its actual influence in such case has yet to be demonstrated.

The pathology, then, of modern days, however little it may have helped us to a knowledge of the nature of the essential and original provoker of diseases, has been of immense service in directing us rightly and logically to their treatment. It does not tell us how or why tubercle is deposited in the organs of the body; but it does teach us how to ward off and provide for the local injuries inflicted on the organs by its presence. When we would learn how to counteract the depositing of the tubercle, then we must turn to the lessons of experimental therapeutics. And it is from the results of experience alone that we can, in any case, arrive at a knowledge of the treatment of disease, so long as pathology is unable to disclose to us its nature. I need not here refer to the extraordinary changes which have passed into the treatment of diseases in consequence of the recognition of these sort of facts. No class of diseases illustrates this fact more remarkably than the diseases which I am about to speak of here.

We no longer look upon endocarditis, or pericarditis, simply as local, so-called, idiopathic inflammations; for we now know them to be the expression of some general disordered condition of the body; and we recognise the fact that the successful treatment of these diseases implies the application of a remedy which shall, so to say, neutralise the agent which produces the disordered condition. We do not now regard the local inflammation as the sole element to be provided against in treatment; and consequently have discovered that those prime agents, bleeding and mercury, which were once thought to be intensely efficacious in cardiac inflammations, are actually baneful when used as then recommended.

The physical diagnosis of diseases is founded on pathological anatomy. It, in fact, premises a knowledge of the pathological states of the different parts of the body, such as they are displayed to us by the anatomist. In the case of the heart, our knowledge of its diseased conditions, so far as they are explained to us by physical diagnosis, is derived—from alterations in the natural character of its sounds; from the presence of sounds, which are heard over the heart coincidentally with its movements, and where none such exist in health; from alterations in the natural extent of the precordial dulness, as ascertained by percussion; and from changed conditions—changes in extent, position, and force—of the healthy impulse of the heart. It is unnecessary to dwell upon the advantages which medicine has gained through the discovery of the diagnosis of internal diseases. The study has naturally become an essential part of the physician's education. But it has been thought, and with reason, that the study may be too minutely prosecuted; and that, relying thereon, the practitioner sometimes pretends to a greater accuracy in diagnosis than the nature of the subject admits of. And, also, that through over estimation of the value of the physical signs, he is apt to fall into the error, when applying his remedies, of unduly subordinating the general symptoms to the local signs. In practice, indeed, we may safely put aside all fine drawn discriminations in the physical diagnosis of cardiac diseases; and may rest well assured that great skill in the practice of the art is not requisite in order that the observer may be enabled to arrive at a sufficient knowledge of the affection of the heart. That degree of acute observation, which pretends so nicely to discriminate, during life, all the minute differences of diseased structure, the exact position and relations of them, such as pathology discovers them after death, is certainly not necessary to guide the practitioner to their treatment. Few people, indeed, possess those physical qualities—that nicety of tact, that fine sense of hearing—which are necessary to serve the observer in such minute differences as the subject may offer. I have seen enough of stethoscopy to satisfy me that over refining in its practice is oftener fraught with mischief than with good for the patient; and apt to lead the observer into erroneous conclusions and practices.

Experience has satisfied me that when the auscultatory signs, in any given case, are such as not to present, to any ordinarily skilled person, clear and distinct indications of deviations from health, they are worth nothing as indications for treatment. It surely, indeed, would be wiser to abandon the stethoscope altogether, than to submit to the conclusion that only one man in a thousand is able to use it effectually.

I have thus endeavoured to state, shortly, the uses of a knowledge of pathology to the physician; and how intimately connected with the treatment and diagnosis of diseases is a correct knowledge of their pathology. I shall, in the next paper, proceed to detail the pathological anatomy of pericarditis.

EXCERPTS FROM DAILY PRACTICE.

By T. HERBERT BARKER, M.D., F.R.C.S., Bedford.

UNDER the above head I intend, from time to time, to forward to the BRITISH MEDICAL JOURNAL such cases, occurring under my own observation, as may seem to merit a record in the literature of medicine. I do not assume to compete, in this record, with the histories of hospital practice already conducted in the JOURNAL. But, as Rush very properly remarked in his eulogy on Cullen, "There are mites in science as well as in charity, and the ultimate results of each are often alike important and beneficial." This quotation is a sufficient apology for me, if apology be needed.

The following case, which caused me much anxiety at the time of its occurrence, I give on the present occasion, as being of considerable interest in the passing time.

I.—CASE OF SEVERE VOMITING AND DYSENTERIC DIARRHŒA, IN THE EARLY MONTHS OF PREGNANCY: ABORTION, FOLLOWED BY RECOVERY.

Mrs. C., aged 42, the wife of a respectable tradesman in this town, became for the first time pregnant in the end of May 1857. Immediately after conception she was attacked with the vomiting of pregnancy, which continued with unceasing violence until the time I was first consulted, August 15th. She had already received various medicines, such as magnesia, carbonate of soda, and Gregory's powder; but without any effect in arresting the vomiting; and she was considerably reduced, partly from the vomiting, and partly from the inability to retain food. A few days before I was consulted the symptoms were aggravated by the supervention of diarrhœa.

When I saw her I found the following symptoms: she was suffering from extreme thirst, emaciation, and exhaustion, and was confined entirely to bed. The vomiting was intolerable. Whatever was taken was returned, sometimes with bilious fluid and mucus, while in the intervals between food there was a persistent loathing and nausea. The vomited matters gave an acid reaction with litmus. She was purged seven or eight times each day, and the matters ejected by the bowels contained no true feculent matter, but mucus, tinged with blood. Accompanying this there was painful tenesmus. The tongue was creamy in the centre, with red tip and edge; the pulse small, quick, and feeble. The whole symptoms, in fine, indicated an acute dysenteric attack, coupled with the vomiting.

Detecting the pregnancy, and believing that all the phenomena of disease had their origin in sympathetic irritation commencing in the uterus, I prescribed, first, an effervescing mixture, with an excess of alkali, to each dose of which were added three minims of the diluted hydrocyanic acid of the *London Pharmacopœia*. This gave no relief. After trying this for a day or so, I prescribed a mixture containing, in each dose, the trisnitrate of bismuth, five grains; diluted hydrocyanic acid, three minims; and five minims of the solution of hydrochlorate of morphia, in water. This mixture, continued every four hours for four days, produced no alleviation in the symptoms. I therefore moved a point in practice, paying more decided attention to the dysenteric symptoms, which had become more urgent. By this time not only was mucus, tinged with blood, still excreted by the bowel, but false membrane, resembling diphtheritic exudation, began to be thrown off in considerable quantity. I now prescribed chalk mixture, with ten minim doses of laudanum, three times daily; and a pill night and morning, containing two grains and a half each of Dover's powder and hydrargyrum cum cretâ. This treatment, with the addition of catechu to the mixture, suppositories of opium, and enemata of starch and laudanum, was continued until the last day of

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