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Analytical and Critical Reviews.

REVIEW I.

Clinical Lectures on Diseases of the Liver, Jaundice, and Abdominal Dropsy. By CHARLES MURCHISON, M.D., &c. London, 1868. Pp. 556.

AFTER the very elaborate treatise on diseases of the liver by Frerichs, which has been placed within easy reach of all English readers by the Sydenham Society's excellent translation, it seemed a bold venture for anyone to upturn anew the same ground for some years to come. Dr. Murchison has, however, attempted the task, and has brought out a book which, although, as its modest title imports, it does not vie with that of the great Berlin clinician in extent of research and literary completeness, surpasses, nevertheless, in clinical usefulness every work on diseases of the liver yet published. By a plan of arrangement quite his own the author has so packed his facts as to make them easy for all to remember, and to produce at will when wanted at the bed-side. Avoidance of all unnecessary detail, and a wholesome adherence to facts, particularly commend these lectures to the notice of every medical student and practitioner. In the still obscure question of the pathology of jaundice he is, it is true, compelled to lean on what he regards as the most probable of hypotheses: yet his rule is to make no statement which he cannot directly back by reference to cases in his wards, or to the post-mortem table. Hence a plan, adopted of late in several of our best medical works, and already carried out by him, though on a smaller scale, in his great book on fevers, has been followed on a large scale in the present lectures;—that, namely of illustrating each subject by

picked and well-recorded cases, either from the wards or from private practice. This method of instruction has for the student the double value of illustration and of guidance in case-taking. The book before us contains no less than ninety-six cases, the greater number of which are related at length, and some of which are pattern clinical records, seizing on important symptoms, noticing where necessary absent symptoms, and zealously avoiding redundancy or repetition. Many of the cases are still further perfected by the aid of diagrammatic figures¹ for marking out physical diagnosis.

The Lectures, twelve in number, delivered at the Middlesex Hospital, have for their main object "to determine the diagnostic import of those signs and symptoms—such as enlargement of the liver, jaundice, dropsy, and pain—which are common to many different hepatic disorders, but the precise cause of which is too often unrecognised." In Lecture I, the normal dimensions of the liver and the spurious or counterfeit enlargements of the organ are considered. Careful rules are laid down to enable the student to distinguish the latter from true enlargements, which are fully discussed in Lecture II. Dr. Murchison has here hit upon the happiest arrangement yet made, by dividing enlargements of the liver into *painless* and *painful*. In the former category are grouped the waxy and fatty liver, hydatids, and hypertrophy. In the latter, congestion, catarrh of the ducts, obstruction of the common bile-duct and retention of bile, abscess, and cancer are included. In treating of the waxy liver, he makes the same appeal to the surgeon that is made by Dr. Dickinson on behalf of the kidneys, in his excellent monograph²—to endeavour, namely, to arrest or shorten as far as possible suppuration from any part of the body, especially from bone. Both these physicians allude more particularly to resection of joints as tending to bring on this waxy degeneration in internal organs, and question how far, from their point of view, this operation can be called conservative.

Lecture III, one of the ablest in the book, is devoted to the *hydatid tumour*. The rule is laid down, and may now be regarded as established, that whenever the tumour "is large enough to be recognised during life and is increasing in size," it is to be tapped with a *fine* trocar, and the fluid contents of the cyst are to be withdrawn; by which means both the parent hydatid and its offspring are destroyed. A spot is to be selected where the fluid comes nearest to the surface, and the trocar is

¹ Outline figures of this kind, most valuable to all who keep clinical notes, may be bought, in neat little books of 12, 24, and 36 sets (price 1s., 1s. 6d., and 2s.), or in loose sheets, at sixpence per dozen sets, of MacLachlan and Stewart, Edinburgh.

² 'Pathology and Treatment of Albuminuria,' p. 212.

here introduced. The cannula is to be removed before the whole of the fluid is drawn off, in order to prevent the admission of air; and, in the removal, the very necessary precaution of pressing the punctured portion of the abdominal wall against the cyst must be taken; otherwise, "the abdominal wall will be pulled away from the cyst in the extraction of the cannula, and the fluid in the cannula may drop into the peritoneum." Dr. Budd's plan of suction by means of an exhausting syringe adapted to the cannula has not answered in Dr. Murchison's hands, on account of the pain which the proceeding seems to cause. We would remark here that Dr. Roberts, of Manchester, is in the habit of adapting a long elastic tube to the cannula after withdrawing the trocar, and so avoiding admission of air. He employs trocars of the smallest possible size. He exhibited at the last meeting of the British Medical Association at Oxford a very ingenious and compact case of instruments for this kind of tapping, and made a most interesting communication on the subject of "exploration and tapping." Dr. Murchison's analysis of cases shows the above-mentioned operation to have been perfectly successful in thirty-five of forty-six cases,—a result which strongly recommends it to all. The characters by which the fluid of a hydatid cyst may, after removal by an exploratory puncture, be with certainty recognised, are as follows:

"If the sac be not inflamed, the fluid is limpid when running in a stream, with a slight opalescence when viewed in bulk; it is alkaline, and has a specific gravity of 1007 or 1009; it contains neither albumen nor urea, but throws down a copious white precipitate with nitrate of silver, owing to its strong impregnation with common salt."

Among the painful enlargements of the liver there is nothing which specially attracts notice in the remarks on congestion of the liver, inflammation of the bile-ducts, and obstruction of the bile-ducts.

The subject of *abscess*, in Lecture V, deserves attention; for the author, familiar as he is with the diseases of India, speaks here with undeniable authority. He distinguishes the *pyæmic* from the *tropical* abscess. The latter is certainly in many instances *pyæmic*—following on dysentery,—as Budd has shown; but, on the other hand, it occurs so often independently of any such cause, and simply as a consequence of inflammation (as Murchison stated, fourteen years ago, in his 'Observations on the Climate and Diseases of Burmah'), that it may be set down as a distinct form of disease. It is, as a rule, single, large, and, contrasted with the European abscess, rarely attended with jaundice. The *pyæmic*, or European, abscess is, on the contrary, multiple, small, as a rule, and, in the majority of cases, attended with

jaundice. The advantages and disadvantages of operative interference in the tropical abscess are fully and temperately discussed, and the conclusion is arrived at that an operation is advisable in a large number of cases.

a. "In all cases where there is a visible fluctuating tumour, operate at once.

b. "In cases where the symptoms of abscess are present, with a distinct tumour projecting from the normal contour of the liver, or causing bulging of the ribs, even though there be no perceptible fluctuation, it will be well to operate.

c. "When symptoms of abscess coexist with uniform enlargement of the liver, but with no distinct tumour or bulging, if there be any local œdema, or obliteration of an intercostal space, or acute pain, always localized to one particular spot when the patient takes a full inspiration, it will be well to operate; but if there be no such œdema or obliteration or pain, it may be better to wait, as the enlargement may possibly be due to multiple abscesses, or, if there be but one abscess, it is doubtful if it will be reached."

Passing from the enlargements, we are brought, in Lecture VII, to the consideration of the different forms of *contraction* of the liver. Of these there are three principal,—the simple contraction (of old age or inanition); the acute, or yellow, atrophy; the chronic atrophy. He agrees with Förster in believing that there are two forms of granular liver or cirrhosis, one in which there is a great density of structure from a superabundance of connective tissue; another in which, although there is a like granular or nodular appearance of the surface, there is no increase of connective tissue, and the texture of the organ is even softer than in health. It is, then, the consistence which distinguishes the one from the other. The former is the "gin-liver;" the etiology of the latter is obscure, but alcohol is not the cause.

The introductory remarks on *jaundice* in Lecture VIII are very sensible, showing, as they do, how medical men are too apt to be satisfied with the fact that a patient has got jaundice, and to plunge at once into the administration of cholagogues, as they are termed, without reasoning on the probable cause of the yellow colour of the patient and reflecting how far the mischief may be aggravated by active treatment. Purgatives, and mercury among their number, do give relief in many forms of jaundice, but we have no evidence to show that they do so by any "cholagogue" action that they possess. Were mercury a cholagogue, which there is every reason to suppose it is not, it would in many cases of jaundice aggravate the mischief a thousandfold by adding to the quantity of bile which is already dammed up by some obstruction to its exit, and is injuring by

distension both the bile-ducts and gall-bladder. An unnatural slowness of the pulse is a symptom noticed in some, but not in all, cases of jaundice. Röhrig's ingenious experiments on rabbits and dogs show that if a solution of cholate or glycocholate of soda be injected into the blood of these animals, the pulse at once begins to flag, but that glycine, taurine, cholepyrrhine, bilifulvine, and cholestearine have no power to produce this effect. He concludes, then, that certain constituents of the bile—biliary acid salts—act as poisons on the nerve ganglia of the heart. Traub¹ has arrived at the same results, but offers another explanation of the phenomenon. Finding, as he does, that, even after the division of the pneumogastric nerves, these salts still produce the same paralyzing effect on the heart, he concludes that it is on the muscular tissue of the heart, and not on the nerve ganglia, that the bile exerts an abnormal influence. It is probable, therefore, that in those cases of jaundice which are characterised by slowness of the pulse, the biliary acids, as well as the bile-pigment, are present in the blood.

Setting aside the larger number of instances in which jaundice is caused by some mechanical or other obstruction of the bile-duct—either by blocking up of its calibre, or by stricture, or by compression,—the pathology of which is clear to all, one turns eagerly, in any new work on the subject, to seek, if possible, some fresh, some clearer, interpretation of the jaundice which cannot be explained by any impediment to the escape of bile, where during life the fæces are bile-stained, and where post-mortem examination finds the ducts free from their origin to their termination in the duodenum. The common hypothesis of “jaundice from suppression” has never been satisfactory. It assumes that the elements of the bile, or at least the bile-pigment, pre-exist in the blood, and are merely excreted, not manufactured, by the liver; that the liver when influenced by certain pernicious agents, as blood-poisons and the like, ceases for a while this excretory action; and that, consequently, the escape of the bile-elements from the blood is temporarily checked or “suppressed.” Hence an accumulation of bile pigment in the blood, and a staining of the tissues therewith. Against this hypothesis may be arrayed some very strong arguments:—1st. “That it has not yet been satisfactorily shown that bile-pigment exists ready formed in the blood of persons who have not jaundice;” 2nd. That extirpation of the entire liver in animals is not followed by jaundice; 3rd. That the liver-tissue may be almost entirely destroyed (in advanced cancer, cirrhosis, fatty and waxy degeneration) so that the gall-bladder contains nothing but a little mucus, and yet there may be no jaundice, and no

¹ ‘Berlin Klin. Wochenschr.,’ 1864, 9 und 15.

bile in the urine. Two years ago, Dr. Bence Jones, in a very striking paper on the subject in question,¹ proposed a solution of this difficulty which carries great weight with it, not merely from the reputation of its author, but from its own intrinsic worth. He asserts that in health a certain quantity of bile is always being absorbed by means of a constant diffusion or transudation of bile into the blood through the coats of the blood-vessels in the gall-bladder. This absorbed bile is at once oxydized in healthy blood, and produces no ill effects. If, however, the normal changes in the blood be deranged by disease (blood-poisons, &c.), or more bile be absorbed than can be oxydized, bile accumulates in the blood and stains the tissues. On this supposition, then, before jaundice in any form can occur, bile must be manufactured by the liver; and all jaundice resolves itself into jaundice from suboxidation and jaundice from an excessive absorption of bile into the blood. Of "suppression of bile" we know nothing, for we are ignorant of the parent substances from which the bile is derived. This view of the matter is adopted by Murchison, who adduces evidence to show that, not only from the gall-bladder and bile-ducts, but also from the intestine, a continual osmosis of bile into the blood is going on in health. Dr. Harley's modification of Pettenkofer's test² for indicating the presence or absence of biliary acids is objected to as untrustworthy by Murchison. The latter applied it to the urine of six of his patients who were in the hospital together, and found that in three of the six the characteristic dark purple colour was formed at the line of junction of the acid with the urine. In two of the three there was no jaundice, nor any disease of the liver; in the third there was jaundice from obstruction. The colour in the latter, he says, could not possibly be distinguished from that in the two former.

Two different conditions, under which jaundice without obstruction may occur, require separate notice. The first of these is the jaundice of blood-poisoning. This is very much simplified by Virchow. He believes that there are always present, in pyæmia, typhus, pneumonia, phosphorus-poisoning, and other similar conditions, catarrhal changes in the stomach and duodenum, which will sometimes, when unusually severe, cause

¹ 'St. George's Hospital Reports, 1866,' p. 189.

² "To a couple of drachms of the suspected urine add a small fragment of loaf sugar, and afterwards pour slowly into the test-tube about a drachm of strong sulphuric acid. This should be done so as not to mix the two liquids. If biliary acids be present, there will be observed at the line of contact of the acid and urine—after standing for a few minutes—a deep purple hue. This result may be taken as a sure indication that the jaundice is due to obstructed bile-ducts." On the other hand, "a brown instead of a purple tint" is said to be equally indicative of suppression.

obstruction of the duct and jaundice, by extending to the lining membrane of the common duct itself. The mucous membrane around the orifice of the duct is swollen up from inflammation, and the intestinal portion of the duct is filled with a white, soft, but co-hærent, plug, which may be squeezed out of the orifice. It is possible that this explanation may serve for some of these cases, but it will not suffice for all. Dr. Murchison's reported cases give convincing proof that jaundice may occur in connection with pyæmia, typhus, typhoid, and scarlet fever, and yet no trace of obstruction be found in the bile-duct on a searching post-mortem examination. Such instances as these—as well as the numerous examples of yellow and remittent fever which have been recorded by other observers, and in which there has been an abundant discharge of bile in the fæces as well as an entire absence of any obstruction after death—must be regarded as cases of jaundice from suboxidation. In the same category Murchison would place the *acute yellow atrophy* of the liver: for he is inclined to look on the atrophy in this disease as one among many other signs of some great blood-disturbance, rather than as the cause of the terrible concomitant symptoms. He points out the very close resemblance that the disease bears, both clinically and pathologically, to phosphorus-poisoning; so much so as to raise a suspicion (Wagner) “that many of the recorded instances of acute atrophy were probably cases of acute poisoning by phosphorus.” He adverts to the fact that leucine and tyrosine are found in the jaundice of typhus as in that of acute atrophy, and that, in a case of enteric fever complicated with jaundice, the liver has been found in a state of acute atrophy. He shows that several residents in a house have been attacked almost simultaneously with acute atrophy, and that this disease has at other times shown itself in an epidemic form. Lastly, the granular degeneration of the heart and renal epithelium in typhus, the general fatty degeneration of all tissues in phosphorus-poisoning, and the fatty change in the heart and kidneys in acute atrophy, all combine to strengthen the suspicion that this mysterious and fearful disease is caused by the presence of some poison in the blood. The second variety of jaundice to which we would call attention, is that *which immediately follows some fright or other mental emotion*. The author here believes that the onset of the jaundice is too rapid to be accounted for by any obstruction from spasm of the ducts or congestion of the liver. He believes, rather, that the natural metamorphoses in the blood are deranged or checked suddenly by nervous influence, so that this form of jaundice would be referred to the same group as the preceding. Dr. Bence Jones supposes that the effect of the shock or nervous irritation is to cause an excessive formation of

bile, that the gall-bladder becomes unduly distended, and that more bile passes into the blood than can be oxydized.

By thus classifying cases of jaundice in acute yellow atrophy of the liver with those of jaundice in fevers, in pyæmia, in phosphorus-poisoning, &c., and regarding them all alike as instances of jaundice from arrested metamorphosis of bile, we greatly facilitate the explanation of those serious cerebral symptoms which are apt to supervene in connection with all these forms of jaundice. The same poison in the blood which prevents the bile from being oxydized, prevents the urea from being properly elaborated; and hence the accumulation in the blood of substances which should be excreted—as evidenced by the presence of leucine and tyrosine—and by which the functions of the nervous system are entirely deranged. How far the changes in the liver itself can be directly regarded as playing an important, or indeed any, part in the causation of these brain symptoms is a question. Dr. Murchison is of opinion that the liver does play such a part; that “the arrest of the functions of the liver checks or modifies the metamorphosis” which ought to be going on in the blood, and adds to the difficulties already present in the way of any proper formation of urea. In this he may be right: but he does not, we would with all deference submit, lay enough stress on another prominent agent in the production of the cerebral disturbance, namely on the concomitant renal disease. We have already alluded to the co-existence of renal disease with acute atrophy of the liver, to the granular degeneration of the renal epithelium in typhus, and to the fatty changes of the kidney in poisoning from phosphorus. In the latter, indeed, the disease of the kidney is quite as marked a post-mortem change as that of the liver. Virchow, again, speaks very strongly on this question. We find in some notes of clinical lectures that we heard him deliver some few years ago, the following statement:—that no condition of the liver itself will account for these serious cerebral symptoms, but that there are always, simultaneously present, signs of disease in the kidneys. He has, he said, never failed to find well-marked changes in the kidney in all the cases of “*icterus gravis*” that have come under his observation. To sum up, then, we believe that the cerebral symptoms which supervene in cases of severe jaundice are due to the presence of substances in the blood which should be excreted; and that this imperfect excretion depends partly on the presence of a blood-poison which interferes with healthy oxidation and elaboration of urea, partly on disease of the kidneys co-existing with disease of the liver and other organs of the body. Whether the atrophy of the liver has of itself anything to do with these symptoms is a doubtful matter.

This valuable chapter on jaundice closes with some useful memoranda for diagnosis, conveniently arranged. They are too full to quote, but are so well put as to be strongly recommended to all practitioners.

The two last lectures deal, the one with "Fluid in the Peritoneum," the conditions which simulate it, its causes and its treatment; the other with "Hepatic Pain," "Gall-stones," and "Enlargements of the Gall-bladder." Both lectures are full of information, and arranged with much method; but the space allotted to us forbids any further notice of them. The dangerous consequences to which gall-stones may lead are dwelt upon with much earnestness, and a warning is given against regarding them as harmless or forming too favourable a prognosis in a case where they are believed to be present.

REVIEW II.

1. *Statistical Report of the Health of the Navy for 1865.* 8vo, pp. 446.
2. *Statistical Report of the Health of the Navy for 1866.* 8vo, pp. 565.

1865 and 1866 were memorable epidemiological years. Apart from other considerations—such as the appearance, after an interval of nearly a century, of the cattle plague in this country, the partial spreading of yellow fever from an infected ship at a port in Wales, the epidemic prevalence of cerebro-myelitis in several districts in Germany, and its limited or sporadic manifestation in England and Ireland—the development and growth of the fourth great migratory movement of malignant cholera over vast regions of the Asiatic continent and ocean, and of Europe and America, suffice to stamp them with more than ordinary interest. For the first time in the history of this remarkable pestilence, has the profession been furnished with a large amount of authentic contemporaneous information relating to its course and career over the face of the globe; thanks to the measures adopted by the medical department of the Privy Council for utilising the despatches of British consuls, &c., in different parts of the world. Much, indeed, remains to be known for the elucidation of the many obscure questions which still surround its history; but a good example in the right direction has now been set, and this cannot fail of eventually leading to important results, if medical men everywhere would but become more