this instance, by the division of bone, a false joint is formed,—we must feel conscious that such advances in operative surgery could hardly be undertaken, or, at any rate, brought to a successful issue, unless con-

ducted upon those grand principles of antiseptic surgery by which local irritation and constitutional disturbance are reduced to a minimum or entirely avoided.

ON SOME INTERESTING CASES OF CHEST-DISEASE: WITH COMMENTS.

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CASE I.—H. D., aged 55, an emaciated man, with a pale, slightly livid, and puffy face, and an anxious suffering look, was found sitting bent forwards in an arm-chair, which he had occupied for many days and nights, being unable, from dyspnoea, to remain in bed. He complained most of inability to take food, except in the form of thin liquids, and in very small quantity. Nor could he sleep, save in fitful doses, with the aid of sedatives. The pulses were small and of irregular force, but equal on the two sides. There was no inequality in the pupils. On closely observing the patient, a certain rhythmic throbbing vibration of the body might be noticed, notwithstanding the feebleness of the pulse at the wrist. On examining the chest, some prominence was perceived over the area shaded in the diagram, and a quick faint, throbbing impulse was conveyed to the hand applied to this part; the systolic pulsation being most marked at two discoloured, bruised-looking, softer, and almost fluctuating spots, marked A and B, around the latter of which there was also some redness. The heart's apex could not be felt. Over the shaded area, there was dullness, with a certain tubular quality on percussion. The cardiac sounds were only feebly heard, and no murmurs were now to be detected. At the left back, over a small area beside the spine and below the level of the angle of the scapula, an impulse was perceptible to the ear; and at this point, the obstruction to the passage of fluid down the œsophagus, as judged by auscultation, appeared to be greatest.

Such were the chief facts included in my last note, taken December 16th, 1874, of the case of a man the history of whose illness is briefly

as follows. He had been a sailor, but was lately a pipe-maker. His habits had always been temperate, and he had never suffered from gout, acute rheumatism, or syphilis. He dated the onset of his malady six years back, when, on one occasion, he felt his chest much oppressed

Over shaded area, dullness, with slight tubular quality, ?communicated from bronchus; diffused systolic impulse. At A, a small elastic pulsating swelling. At B, the most prominent point, a bruise-like appearance; systolic pulsation here most marked. C, position of apex ascertained at earlier examination; confirmed *post mortem*. No beat now (December) perceptible.

whilst carrying a heavy iron pan weighing three hundredweight. He did not at the time, however, have any more definite symptoms, but had suffered more or less since from pain in the chest and dyspnoea, for which he had been under medical treatment, without relief, for five years. He first came under my notice in April 1874, and had then been for some time obliged to sleep reclining on one side, or propped up by pillows. He had, however, no cough; the pulse was slow, without special character, save that the vessels were obviously degenerated. The mediastinal dullness at this time extended from the third to the fifth cartilage mid-sternum; and, opposite to the third and fourth cartilages, there were a slight *bruit* with systolic impulse, and a *prolonged diastolic bruit*, having the usual characters of an aortic regurgitant murmur. The apex of the heart was found beating lower than natural, and to the left of the nipple-line.

In July, whilst the patient was in the Brompton Hospital, cough became troublesome, and sibilant *râles* were heard over the chest, but the cough had no peculiar characters; and although the dyspnoea had steadily increased, dysphagia was not yet complained of. The patient soon afterwards left the hospital, and I saw nothing more of him until December. He gradually sank from exhaustion, and died January 13th, 1875.

At the *necropsy*, a very large globular dilatation of the aorta was found, extending from 1 inch beyond the valves to 1 inch beyond the origin of the subclavian, measuring $4\frac{3}{4}$ inches across, 5 inches antero-posteriorly, and $4\frac{3}{4}$ inches vertically. And from the front of this dilatation, communicating with it by an opening of the size of a halfpenny, a sacculated aneurism proceeded. This sac was entirely filled with coagulum; it was flattened against the eroded sternum, but spread out equally in other directions to a diameter of three inches and a half. The intrusion of this sac between the sternum and the base of the heart displaced that organ backwards. Spots of softening coagulum corresponded with the fluctuating points referred to during life. The œsophagus was greatly pressed upon, but the bronchi were not involved. Both pneumogastric nerves were adherent to the aneurism, and the left recurrent could only be dissected out with trouble. Although the aorta was so enormously dilated to within an inch of its commencement, and even the descending thoracic portion had a circumference of six inches, yet its orifice was of natural dimensions, and the valves did not permit regurgitation of water.

REMARKS.—One or two points in the diagnosis of aneurism are well illustrated in this case. The first diagnosis was that this was a case of dilated aorta secondary to regurgitant valve-disease, arising from injury to the aortic valves. But it soon became apparent that the area of dullness and impulse (*vide* diagram) was too low and too central for this, and the case was regarded as one of sacculated aneurism near the base, with aortic regurgitation.* Later still, in December, the case again became puzzling. For the low position of the tumour, its great size, and the displacement backwards of the heart, so that the apex could not reach the ribs, together with the absence of murmurs

* I have elsewhere endeavoured to point out the etiological relationship between aortic regurgitation and aneurism (*Trans. of the Clin. Soc.*, vol. vii).

and the evidence of pointing in two places, led me to hesitate between the former diagnosis and that of pulsating abscess or soft malignant growth. And here the fact of a diastolic *bruit* having existed over the base of the heart, to my mind, settled the diagnosis; for I have never been disappointed in the practical value of the rule that a mediastinal tumour associated with a diastolic murmur may be surely regarded as aneurismal, inasmuch as a diastolic murmur signifies disease within the aorta. The significance of this murmur when present is equally valuable whether it be heard over the heart or over the tumour. Systolic *bruit*, though much more common, is not nearly so valuable a sign, being frequently caused by pressure upon the aorta from without. The two murmurs are most often combined; thus, of thirty-six cases of aortic aneurism that have come under my own observation, a double murmur was present in twelve, a diastolic murmur alone in two, and a systolic alone in eight. The disappearance of the murmurs in this case was due to the occupation of the sac by coagulum under the starvation treatment to which the poor fellow was perforce submitted. The integrity of the aortic valves, and the absence of hypertrophy of the left ventricle, were worthy of note in this case. It is laid down in text-books that cardiac hypertrophy is almost always present in aneurism. I have, however, seen many instances to the contrary; and of twenty-two cases quoted by Dr. Blakiston, in his work on *Diseases of the Heart*, in only eight was hypertrophy present.

DIPHTHERIA.

By ROBERT BELL, M.D., F.F.P.S.G., etc., Glasgow.

PERHAPS the most difficult problem in medical science which remains to be solved is that which relates to the causation of zymotic disease. All are certainly agreed that each infectious disease is due to a specific poison which, by one way or another, gains access into the body of its victim; but what the nature of the entity is, and in what manner it enters and attacks the human subject, is still a mystery. I say, in what manner it enters the system of the patient is still not understood. I feel convinced that too much has been taken for granted, and accepted as fact on this point; and I am certain it will not be until this question has been satisfactorily settled that we shall arrive at correct conclusions as to the nature of the different poisons which we call contagia. It is all very well for us to assert that the disease-producing essence is inhaled by the breath, and thus gains access into, and produces its baneful effects upon, the individual. I hold that we have no proof of this theory being correct. It was at one time thought that typhoid fever was infectious; that it was by inhaling the poison in the process of breathing the disorder was contracted. I feel that those who have had most to do with the treatment of this malady will agree with me that typhoid is not infectious in this sense. Other instances might be cited, showing that our opinions on this important subject have recently undergone considerable change. In diphtheria especially, it appears to me that our conceptions with regard to the mode of ingress of the poison are very far from correct, and will not yield the fruit which we much desire to reap; viz., an effectual means of destroying the disease, and thus saving the lives of our patients. Some years ago, it struck me that, when diphtheria attacked a patient, the *modus operandi* was the following. The germs of the disease become located on a surface which provides a favourable soil for their development and multiplication, just in the same way as the germs of typhoid select the mucous membrane of the bowels. In the disease under discussion, the locality chosen by the poisonous particles is the throat and the neighbouring mucous surfaces. Here these *materies morbi* implant themselves, becoming attached by the tenacious and viscid secretion of the tonsils, the warmth and moisture of the part favouring their further development and progress. A dense fungoid growth is the result, at first of limited extent, but gradually encroaching upon the surrounding healthy mucous membrane. The very presence of this deposit—I refrain from calling it an exudation—results in inflammation of the subjacent and surrounding tissue. We may, and often have, a diphtheritic deposit without the slightest constitutional disturbance. I have often seen diphtheria in its early stage without the general system having apparently been affected in the slightest degree; and I venture to say that diphtheria, in its incipient stage, rarely affects the general health. Moreover, if the patient be strong and robust, some time will elapse before constitutional symptoms will manifest themselves. On the other hand, if the victim be weakly and in feeble health, or if his vital energies have been laid low by breathing foul gases, the disease will run a rapid, and in general a fatal course. From what has been said, it will be perceived that I conclude diphtheria to be, in its first stage, purely a local disease, exactly as a chancre, at its commencement, is

syphilis in the part only, not having yet affected the general system; or, to take another example, just as vaccinia, in its primary stage, is purely a local lesion. Another example may be cited; viz., the snake-bite, which, if caught in time, may have its venom limited to the part bitten. It is, therefore, in this stage of the disease that an effectual and speedy cure can be guaranteed. When, however, the disease has for some time established itself on the tonsils, poisonous matter from the film becomes absorbed, first by the lymphatics, as indicated by the hardening and enlarging of the neighbouring glands, and then the general system becomes impregnated, and it is at this time that the greatest danger threatens the patient; the vitality becomes reduced, and the poisonous film spreads with increased rapidity, the poison becoming multiplied with most deadly speed within the body. The above conclusions have been gradually arrived at after carefully observing a large number of cases of this dreadful disease. It is now time to say a word or two on the nature of the deposit, which is the principal feature of diphtheria. This always begins in one or more minute specks or points. These gradually enlarge to such an extent, and coalesce so, as sometimes to cover the whole area of the throat, and often the palate, posterior nares, and larynx. On its first appearance, it most closely resembles an aphthous spot, and indeed the aphthous and diphtheritic diseases bear a very close resemblance to each other in many ways. They both attack the mucous membrane of the mouth and throat; their appearance to the eye is similar; they both indicate a weakened condition of the general health; they are both fungoid in their nature; and I am not sure whether the one may not degenerate or merge into the other. Bearing these points in mind, it is always a safe plan of treatment to destroy in the early stages any deposit of a suspicious appearance on the tonsils or other surface of the throat; and it now remains to be seen how this can be accomplished. If what has been said anent the nature of the film, and the portal by which the disease enters the circulation, be correct, it follows that, if we can destroy the poisonous quality of the film while the disease is yet local, we keep it in that condition, and prevent its further effect on the health of the patient.

I may premise my remarks on treatment by stating that, since I have adopted my present method, I have only lost two cases from this disease; and these were children who resisted me to such an extent, that it was absolutely impossible to employ the treatment at all. It has been my lot to treat a large number of patients suffering from this disease, and it is with gratitude that I say with almost uniform success. My first consideration is to view the disease as one entailing rapid and severe prostration. This thought impels me to insist on free stimulation and plenty of nourishment, in the shape of soups, jellies, and milk, and this from the very onset of the disease, so as to assist the *vis medicatrix nature* to combat successfully the disease, and, if possible, expel it from the system. The grand aim is to endeavour to prevent the vital energies from succumbing to the fearfully prostrating effect of the poison. This dietetic treatment must be simultaneous with local and general medical treatment; but the most important, in my opinion, is the local application of substances which destroy the poisonous properties of the deposit on the throat. This consists of carbolic and sulphurous acids along with the liquor ferri perchloridi. My application generally consists of carbolic acid, one part; sulphurous acid, three parts; solution of perchloride of iron and glycerine, of each four parts. This is either applied with a large camel-hair pencil, or by means of the spray-apparatus, at intervals of two hours. The mouth should also be frequently rinsed out with a weak solution of Condy's fluid in water, and the following mixture taken in dessert-spoonful doses every two hours:—R Potassæ chloratis ʒiij; acidi sulphurosi ʒiijss; tincturæ ferri perchloridi ʒiij; glycerini ʒi; aquæ q. s. ad ʒvi. M. In this way, a medicament is applied to the throat every hour, and, to be successful in curing the disease, this energetic treatment is absolutely necessary. Of course, if the patient be sleeping, the usual rule must be observed; viz., never disturb a patient if asleep.

In conclusion, I may remark that the presence of albumen in the urine must not be looked upon as a necessary symptom of diphtheria, as it often does not manifest itself till far on in the disease; and, on the other hand, I have often observed albuminuria as a concomitant of ordinary sore-throat. It should also be remembered that, at certain periods of the day during the progress of digestion, albumen can often be detected in the urine when no disease is present.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—On Friday, January 7th, the fourth meeting of the Society was held at the Royal Kent Dispensary, Greenwich Road: Dr. J. N. Miller, President, in the Chair. Dr. Thomas B. Peacock read a paper on Rheumatic Carditis. The next meeting will be held on Friday, February 4th, at 8 P.M., when Dr. Tilbury Fox will read a paper on Ringworm.