quite strong before this attack, but had fallen away very rapidly in flesh since. He never had any syphilitic affection. He had had no treatment previous to admission, except the application one evening of a mustard poultice to his throat.

On admission, he experienced difficulty in breathing and pain in swallowing. He had loss of voice. He had a copious expectoration of muco-purulent matter tinged with blood. A firm swelling existed on the left side of the neck, which appeared to be pressing upon the larynx. There was nothing to be seen on looking into the throat except a slight increased redness, and a little ulceration at the back of the pharynx. He was ordered a blister and a gargle of alum.

September 10th. He was not much better. The throat was directed to be touched with the sponge dipped in a solution of nitrate of silver.

September 14th. Another blister was ordered to be applied to the throat.

September 15th. He expressed himself as rather easier since the second blister. He was ordered to have ten grains of Dover's powder at bed-time.

September 17th. His breathing was much worse to-day; and, after holding a consultation, it was agreed that tracheotomy was his best chance of relief. It was accordingly performed, and his breathing soon became very much easier, and swallowing less painful.

September 18th. He slept comfortably during the night. He had for nourishment, milk, arrowroot, eggs, and beef-tea.

September 24th. He was ordered to have fifteen minims of dilute nitro-muriatic acid in water three times a day.

October 9th. The tumour was increasing rapidly, and appeared as if it contained fluid. He breathed comfortably, but always through the tube.

October 26th. He was getting very weak. The tumour continued to increase, pushing the trachea forwards, and to the right side.

October 28th. He died this afternoon, having used the tube for six weeks all but a day.

POST MORTEM EXAMINATION showed well marked malignant disease, which appeared to have commenced in the lymphatic glands of the neck. The swelling consisted of a number of cysts filled with yellowish fluid. Under the microscope were seen numerous cells, corresponding in appearance to that denominated the cancer-cell. Both the trachea and œsophagus, more particularly the latter, were the seats of extensive ulceration.

REMARKS. We have in this case unmistakable evidence of tracheotomy not only having relieved severe symptoms, but prolonged life. The patient survived for six weeks all but a day after the operation; and had his breathing not been relieved at the time it was, he could not have existed many hours. The performance of tracheotomy for the relief of aneurism and tumours generally, has often been a disputed point; and those who oppose it, do so on the ground that as it can do no permanent good, it is only inflicting unnecessary pain upon the patient, and tending to bring the operation of tracheotomy into disrepute. It is the duty of every medical man to do his utmost to relieve and prolong life, if he cannot cure the disease. The operation of tracheotomy is a slight one; and if, in cases of aneurism or tumours pressing upon the trachea, we can relieve the urgent symptoms, the patient ought surely to have the benefit of it. Contrary to bringing discredit upon surgery, it is placing it above medicine. The physician, having done his utmost, calls in the aid of the surgeon to prolong the patient's life.

BIRMINGHAM WORKHOUSE INFIRMARY.

HYDROCELE: RADICAL CURE BY METALLIC SETON.

Under the care of REDFERN DAVIES, Esq.

THE substitution of metallic wires for vegetable ligatures is a subject so much under the notice of the profession at the present time, that the following case, ordinary in all other particulars, commends itself to our notice as illustrative of the idea thrown out by Professor Simpson, with regard to the treatment of hydrocele by iron wires.

Patrick Coyne, aged 32, a well proportioned Irishman, was admitted into the Infirmary, on February 5th, in consequence of being the subject of hydrocele; which, he stated, had been tapped some three months previously. The fluid had fast accumulated to about the size of a small cocoa-nut; and he was desirous of having something more effectual done for him. Accordingly, following out precisely the plan suggested by

Professor Simpson, an iron wire was introduced longitudinally and another one transversely.

February 6th. All the fluid had drained away.

February 12th. The wires were withdrawn. The portion contained within the scrotum was quite bright. A copious purulent discharge issued from the track of the wires. There was considerable swelling of the scrotum; but the testis was but very slightly enlarged, and by no means tender. He was ordered to have hot fomentations applied, and the testicle to be supported.

February 15th. The discharge was much less, and the swelling less. He was allowed to go about the ward, with the scrotum supported.

February 25th. All discharge had stopped for three days; and the swelling had quite subsided.

March 6th. Upon looking at the scrotum, the raphe was seen to be in the median line of the body, and the two sides appeared to be equal and natural, save in the centre of the one which was operated upon, where there was a slight puckering and depression of the surface. Upon examining it with the fingers, the parietes of the scrotum on the affected side were felt to be thickened and matted together in the centre. The testicle lay naturally.

The case would seem to be radically cured; and during the whole of its progress, the inflammation excited was so moderate in intensity, and the pain throughout so trifling, or indeed absolutely *nil*, that this plan of treatment seems deserving of further attention.

Original Communications.

REMARKS ON THE USES OF BLEEDING IN DISEASES.

By W. O. MARKHAM, M.D., F.R.C.P., Physician to St. Mary's Hospital, and Lecturer on Physiology and Pathology at the St. Mary's Hospital School.

[Read at the Royal Medical and Chirurgical Society of London, November 23rd, 1858.]

THE subject of bleeding in inflammation has of late so much occupied the attention of the profession, that I feel called upon to offer a word of apology to the fellows of this Society, for bringing it under their consideration. I have ventured to introduce the subject here, for two reasons: Because, in the first place, I know that there are many members of the profession, besides myself, who consider that the issue of what has been called the "Blood-letting Controversy" has not been altogether satisfactory, in so far as it has tended to bring about, in practice, a greater abstinence from the use of venesection than is altogether desirable in the treatment of disease; and, secondly, because I am desirous of placing before the Society a few particulars concerning the mode of action of blood-letting, from which, I venture to think, we may draw a truer estimate of the value and uses of bleeding in disease, than can be obtained from a consideration merely of the consequences, which have been noted as ordinarily resulting from it.

It is not my intention to weary the Society by going through all the historical details of this discussion. The opinions of the past and of the present generation of authorities upon most of the points relating to venesection, are tolerably well known to all of us. I shall, therefore, confine myself as narrowly as possible to an exposition of certain of the modes of action and consequences of bleeding in disease, such as are familiar to us all, and which will, I believe, be generally accepted as indisputable facts. And I shall then ask the Society whether, arguing from these facts, we may not legitimately arrive at some positive and definite conclusions, concerning the uses of bleeding, and its right application in disease. Hitherto, in this controversy, men have chiefly founded their opinions, as to the value of venesection in inflammation, upon conclusions drawn from the general results of practice, and upon the very fluctuating basis of personal experience and of medical statistics. If the views here suggested be admitted, they will, I cannot but think, tend in some degree to explain the remarkable discrepancies of opinion which always have been, and still are held by the ablest practitioners of our art, concerning the use of this remedy; and they will also tend to show why bleeding is found to be at one time of such marked and manifest service in the treatment

of disease, and why again it is so often found to fail in giving the relief anticipated from it; and, moreover, this other conclusion seems to result from them; viz., that venesection is, at the present moment, less frequently resorted to than is desirable.

Entering, then, at once upon the argument, it is necessary, in the first place, to premise that a marked distinction must be drawn between venesection and the local abstraction of blood. I may, I believe, take it as a fact which admits of no dispute, that the local abstraction of blood from an inflamed part during, at least, the congestive period of the inflammatory process, acts beneficially *quoad* the part inflamed. We have the proof of this clearly demonstrated in the diminution of the chief characteristics of the inflammation—of the heat, the pain, the redness, and the swelling—which is so constantly seen to follow, and so immediately, the local abstraction of blood from external inflammations; and this, too, whether the inflammation be of a specific or of a traumatic origin. A few leeches, for example, applied to a sprained ankle, or to an inflamed rheumatic joint, rarely fail to give relief in either case. And if this fact be admitted as true in the case of external inflammations, we may most reasonably conclude, that in the treatment of internal inflammations, direct abstraction of blood from the inflamed part will be equally beneficial, whenever it can be performed, and performed under the same condition. This, I say, we may reasonably conclude, because the chief local accidents of inflammation are alike, whether the inflammation be fixed upon the internal or upon the external parts of the body.

Now direct abstraction of blood draws blood from the inflamed part, and so acts locally upon it; moreover, it draws blood, we may surmise, that is altered and deteriorated by the inflammatory process, and therefore no longer fitted for its proper purposes, and which may act poisonously upon the part itself, and upon the system generally, in so far as it passes into and mingles with the general circulation.* But venesection has no such direct influence over the inflammation. Venesection acts upon the inflamed part only through the general circulation—in a secondary manner, *i.e.*, through the influence which it exercises over the vital forces of the body. It reduces the action of the heart; it lessens sensibility; and, in so far, it brings ease and comfort to the patient; but it exercises no visible or appreciable influence over the external inflammation, unless carried to such an extent as will produce syncope; and never such effects as are produced by the local abstraction of blood. A few leeches applied around an acutely inflamed eye will more surely give relief, than a pint of blood would taken by venesection. We may bleed a man until he is blanched, but we do not thereby cure his rheumatic affections, or his pneumonia; these, spite of all our bleeding, will still run their course, modified for good or for ill by the shock thus administered to the body. But though such bleeding bring no cure to the inflammation, and sometimes manifestly works a very baneful influence over its future progress, it is not without its apparent use. Amid great suffering it brings great comfort. The patient and his physician feel and see the striking and instant relief which it effects. Herein lies its advantage; and herein lie the danger and the delusion attending the practice of venesection. The present benefit of it is evident; but the dangers of the practice lie all in the future, and require the calculating eye of science to spy them out. This is a lesson, which has been learnt by experience in all ages of medicine, but which has been turned to practical account only in our own day. The baneful influence over the progress of inflammations exercised by large bleedings, was well known to Heberden and other keen observers of disease, long before the days when disease first changed, as it is said, its type.

Direct bleeding, then, acts immediately on the local inflammation; it does not (as ordinarily practised) affect the system generally. Venesection, on the other hand, has a powerful influence over the constitution, but very little, if any, immediate influence over the local inflammation. The good effects of direct bleeding are manifest, and it does no hurt to the constitution. The good effects of venesection upon inflammations are dubious and disputed; its evil effects over their progress have been often demonstrated. Concerning the *modus operandi* of the direct abstraction of blood, there is no necessity for us to theorise here; it is enough for the argument that it exercises a manifestly beneficial influence over the disorganising process, and that it does so without injuring the vital powers of the patient.

* May it not be this poisoned blood which excites the inflammatory fever attending traumatic injuries?

Now, applying the conclusions thus arrived at, concerning the influence of direct bleeding, and of venesection over *external* inflammations, to the case of *internal* inflammations, we are, I think, legitimately led to the conclusion, that direct bleeding must be beneficial in the cure of all those *internal inflammations*, in which it can be effected; that is to say, in which there is a direct vascular communication between the inflamed parts and the parts from whence the blood is drawn; but that venesection will exercise no directly beneficial influence over them. And modern experience seems to have confirmed this conclusion, by assigning the highest value, as a remedy, to direct bleeding in all those cases of acute *internal inflammations*, in which anatomy teaches us that it is practicable, and by giving a daily decreasing estimate of the value of venesection in such cases. The inutility and the dangers attending the practice of large venesections, have been long ago recognised by the physician and the surgeon in the case of *external inflammations*. The surgeon never bleeds now-a-days to prepare his patient for an operation, or to anticipate the dangerous consequences of some external injury; and the physician also has abandoned to practice in all those *external inflammations*, which fall under his care—in erysipelas and acute rheumatisms, for example, and, doubtless, for similar reasons. Modern pathology has proved definitely, that from the very nature of these inflammations, venesection neither is, nor ever could have been the proper cure for them.

But in *internal inflammations*, from the very nature of the case, we cannot see our way so clearly to a like conclusion. The light, indeed, diffused by modern medicine, has broken in upon us here; but it has not yet cleared away all the obscurity. One by one, those internal inflammations whose treatment was thought absolutely to demand large general depletions, have been erased from the catalogue—in practice at least; for strange, in this particular of bleeding, is the discord between the theoretical precepts enjoined by our authoritative text books of medicine, and the actual practice of their authors. Acute dropsy, hepatitis, gastritis, cerebritis, peritonitis, etc. are found no longer to require large losses of blood for their cure. Pericarditis and endocarditis even, for whose cure only a few years ago—and long after the date, be it observed, when diseases are said to have taken on a new phase—the most copious bleedings were considered necessary by our highest authorities, are now found to be actually injured rather than benefited by such treatment. All these facts—this remarkable revolution in the modern treatment of disease—though no positive proof, assuredly tend to prove the truth of the assertion: That general bleeding neither is, nor ever could have been, a right and necessary remedy for the cure of inflammation, *quoad the inflammation itself*.

Are we then to conclude from this, that physicians have been during so many years, and that they still are, at this present period, acting under a complete delusion as to the services rendered by venesection in internal inflammations? This, most assuredly, it is impossible to believe. And I will now proceed to show in what manner venesection, as I believe, does act, when it acts usefully in internal inflammations; and I will also endeavour to show what seem to me to be proofs of the actual necessity for venesection in the course of certain internal inflammations and other diseases. The thesis which I would maintain is this: That, as regards internal inflammations, venesection is of service, not through any *direct* influence which it exercises over the inflammatory process, but in consequence of its removing certain of the *secondary* consequences, which arise *accidentally* out of the inflammation; that venesection, in fact, acts in internal inflammations, as it acts in all other diseased conditions in which it is of service, viz., by relieving the oppressed and congested condition of the heart, which has arisen as their consequence; and that the direct abstraction of blood is of service in those internal inflammations, in which anatomy shows us that it is possible.

Now, I believe, it will be found by those who will calmly investigate the position here assumed, that the condition to which I refer—the cardiac congestion—necessarily exists to a greater or less extent in all those cases, in which practice shows that venesection is a useful remedy—whether the congestion have arisen *secondarily*, as for example in pneumonia; or *directly*, as a consequence of valvular or aortic disease. And it will also be found, that the benefits of the venesection become more clearly manifest in proportion, as the disease for which it is practised tends to produce a higher degree of this cardiac congestion. It is a fact well worthy of note here, that the particular inflammation, which both in past and present days has been especially selected as demonstrative of the utility of venesection

tion, is just the very inflammation, during whose progress the condition to which I refer is most readily apt to supervene. And it is also certain, that at the present moment at least, venesection is never practised except in those diseases, during whose progress this congestion plays a prominent part.

Let us consider, shortly, the case of pneumonia from the point of view here indicated. When we come to investigate the different facts attendant upon pneumonia, we shall find that there are certain special conditions associated with it which give a different significance to venesection practised for its cure, from that usually ascribed to it; viz., reducing the febrile action, lessening the pain, aiding the action of other remedies, and controlling the inflammation. The most important indications for venesection in the acute stage of pneumonia, as laid down by authorities, are: the difficulty of respiration, the oppression that is felt, and the pain. But a little consideration will show us that the pulmonary inflammation is not the sole cause of these symptoms. Pneumonia arrests *pro tanto* the respiratory function and the pulmonary circulation; the necessary consequence of which is a proportional degree of interference with the heart's action and its congestion. Then, again, pleurisy is the usual attendant of pneumonia, and the pain of pleurisy will prevent the free movement of the thoracic walls. Hence, then, we have three distinct facts to consider as causes of, as symptoms of, and in reference to the relief of, the impeded circulation; viz., the inflamed lung; the obstructed heart; and the inflamed pleura. Now it is evident, that in pneumonia direct abstraction of blood from the inflamed lung is impossible, that no amount of cupping or leeching over the thorax will draw blood directly from the seat of inflammation. It is, therefore, only through the general circulation, that we can possibly operate in this way; and what proof have we that venesection will operate beneficially upon the inflammation? Reasoning from a just analogy—from what we see in the case of *external* inflammations—and fortified by the large and general concurrent testimony of modern experience and observation, we are certainly justified in concluding, that large bleedings—the only bleedings which have any manifest influence over the inflammation—are more likely to be injurious by weakening the system, than beneficial by diminishing the local inflammation. Again, it may be argued, and for similar reasons, that neither does venesection exercise any beneficial control over the pleuritic inflammation which accompanies the pneumonia.

But if venesection—admitted to be often of great service in the course of pneumonia—act not usefully either upon the inflammatory processes going on in the lungs or in the pleura,—then we are naturally led to ask, whether its useful influence may not be exerted upon that other necessary condition of pneumonia—the distended and obstructed heart. We are, indeed, necessarily led to such an inference, arguing *par voie d'exclusion*, and admitting the foregoing premises to be correct. Moreover, we find as I conceive, that the inference is raised to something of a certainty, when we reflect upon what *must* necessarily be the condition of the heart in those other diseases—whether inflammatory or otherwise—in which bleeding is also admittedly often of benefit to the patient—in aneurisms and cardiac diseases.

The extremely beneficial effects of venesection in wounds and severe injuries of the lungs have been placed beyond doubt, by the experience of Mr. Guthrie during the Peninsular war, and by that of our army surgeons before Sebastopol. Venesection was found by them in such cases absolutely necessary to save their patient's lives. In injuries of this nature it is evident that the heart must be grievously oppressed, and its right side especially distended with blood. The lung in a man thus injured has its function suddenly arrested; the aerating surface of the lungs being reduced by one half. And here the prominent symptoms, which are the indications for the venesection, are just the same as those which are its indications in pneumonia. But the bleeding is practised at *once*, before any inflammation arises; indeed its beneficial effects are most noted, the earlier it is practised after the receipt of the injury.

Again, in those cases of diseases of the heart and of its great vessels, in which venesection is so often found of temporary service, does not the same condition of the organ exist, and do not the same symptoms indicate the employment of the remedy, as in pneumonia? In the case of endocardial and pericardial inflammations it is evident, that the impeded circulation—this cardiac congestion—must frequently be produced, and from causes immediately affecting the heart itself. In the case of peritonitis, the congestion may be produced in part

mechanically—as a consequence of the partial arrestment of the respiration, by the pressure upwards of the diaphragm. In the case of injuries of the head, the oppression of the heart may be produced by diminished nervous sensibility of the lungs.

There is also another fact which corroborates the view here held; viz., the nature of the pain which so frequently accompanies pneumonia and pleurisy, and which is so often relieved by venesection, and often taken as the chief indication for the bleeding. This pain is, as far as I know, invariably ascribed to the attendant pleurisy, and the relief afforded to it by venesection ascribed to the relief given to the pleurisy; but there are good reasons which, I think, justify us in believing that such pain does not invariably, nor as a rule, result from pleurisy; and that it is, in fact, more often than otherwise the consequence of obstruction to the passage of the blood through the heart. The reasons are these: The pain in question is usually referred to the same spot somewhere beneath the breast; and this sometimes even when the stethoscopic signs of the pleurisy indicate that the pleuritic inflammation is seated over some other part of the lung, and not there where the pain is felt. Observers, indeed, have noted that the pain is in some cases referred to the healthy instead of the inflamed side of the chest. Now there is nothing, certainly, in the anatomical relations of pleuritic inflammation, which would lead us to believe that the pain attending it should be always felt at the same part of the chest, wherever the seat of the inflammation of the pleura.

On the other hand, we constantly meet with a pain of this kind which arises in diseases of the heart and its great vessels, when the circulation and respiration are much disturbed. The pain may arise suddenly in such cases; and it is relieved more readily and effectually by small abstractions of blood, than by any other remedy. The pain, often severe, familiar to every one, which sometimes arises, after running, in the lower part of the chest, the so called stitch in the side, appears to me to find a ready explanation in this deranged condition of the heart. Here we have the blood suddenly sent to the heart in a large quantity, so that its right side becomes distended and oppressed, and the very same condition of it is produced as occurs in pneumonia; indeed, in this congested condition of the lungs (as far as the mere circulation of the blood is concerned,) we have an exact temporary simulation of pneumonia in its very beginnings. Moreover, it must not be forgotten that we constantly meet with cases of pleurisy, in which there is an entire absence of pain. Every stethoscopist is well aware that pain is often absent in pleurisy, and that pleuritic friction sounds are very frequently the only signs which indicate the existence of the pleurisy in pneumonia; and, again, that the pain here spoken of is often present, when no signs of pleurisy exist.

If, again, this pain were really the invariable consequence of pleurisy, how are we to explain the fact of its frequent removal by venesection, venesection having, as above maintained, no proven influence over inflammations? The other explanation of its origin—viz., as a consequence of cardiac derangement—gives us the clue to its removal.

I do not, of course, mean to conclude from this, that pain never accompanies pleurisy, for there is no doubt that it frequently does so; but the pain of which I am speaking is of another sort, and, as I believe, not to be relieved by venesection, excepting in so far as venesection, being large, deadens sensation.

Facts of this kind naturally, as I think, lead us to the conclusion, that the relief often given by venesection, aptly practised in pneumonia, results rather from its influence over the oppressed heart, than from its influence over the inflammation of the lungs and pleura. And it is a fact worthy of remark, that at the present day there is never any question as to the necessity of venesection in any other diseases than those above referred to, that is to say, in which this oppressed condition of the heart is frequently an accidental ingredient. Indeed, it may be truly said, that venesection is almost wholly abandoned in practice, except in the case of diseases of the lungs and of the heart and its great vessels; and for the reason, as I conclude, that the condition of the heart, which is remedied by the venesection rarely occurs in the course of other diseases—or, at least, to such a degree as to require its use.

In order more clearly to explain the position assumed, I will here narrate four cases, in which the congested condition of the heart was provoked by causes operating in different parts of the body; viz., in the heart itself; in the lungs; in the abdomen; and in the cranium. In all of them the same condition of the heart and the same symptoms were present, claiming a similar treatment.

A powerful vigorous looking man, who had enjoyed good health previously to his present illness, came under my care in St. Mary's Hospital during the last summer. He was suffering severely from dropsical symptoms; the lower part of his body was cedematous; and there was serous effusion in his peritoneum and pleura. His breathing was much oppressed and very painful. His face was dusky. The cause of all this mischief, which had arisen rapidly, was organic valvular disease of the heart. The remedies prescribed gave him no relief. On the third day of his residence in the hospital, he was evidently worse: he could not lie down. I ordered him at once to be bled, and stood by him while about twenty-six ounces of blood were taken from his arm. He felt immediate relief. The next day, I found him decidedly better. On the third day after the bleeding, he was able to lie down in bed. In the course of a week, he was walking about the ward, and soon afterwards left the hospital convalescent, and, as he himself thought, quite well, but, of course, with his organic disease of the heart unchanged.

In this case, the good effects of the bleeding were too immediate and lasting to leave any kind of doubt as to their reality; and I see not how it is possible to ascribe those effects to any other cause than to the influence exercised by the bleeding over the heart. There was here no inflammation to relieve; and it is very certain that the bleeding could have no direct power in removing the effusions which were mechanically pressing upon and impeding the function of the lungs and other organs. If it should be suggested, that the bleeding promoted the action of other remedies, I would answer, that it could not fail to do so, in that it relieved the heart; but that the benefits of the bleeding were distinctly manifested before those remedies displayed their due effect.

To show the good effects of bleeding in pneumonia, I will relate the case of a man who was some months ago under the charge of Dr. Chambers, in St. Mary's Hospital. This man's disease was inflammation of the upper lobe of the right lung. Complete dullness on percussion, and loud bronchial breathing heard over that part, clearly indicated that consolidation of the lung had taken place there. There was no coexisting sign of pleurisy. The patient suffered severely from pain in the side, and his breathing was much oppressed. He was therefore ordered to be bled, and from twelve to fourteen ounces of blood were taken from him. The bleeding brought great and immediate relief; and, on the following day, the condition of the man was entirely changed. He was then found breathing tranquilly, and the pain had left him; but the stethoscopic signs were unaltered, and the condition of the lung was unchanged. The bleeding could have had no direct influence over the inflamed lung; it admitted air no better now than it did the day before; and it is evident that no amount of bleeding could have removed the exudation into the air-cells and pulmonary tissue, which caused the dull percussion. How then did the bleeding work this, so manifestly beneficial effect? Solely, I think we must conclude, through its action upon the distended and oppressed heart.

The following case illustrates the benefits of bleeding in a case in which the chief cause of the cardiac congestion was pressure of the abdominal organs upon the diaphragm. A lady, of delicate health, and subject to palpitations of the heart, while driving out, a few weeks before her confinement, was suddenly seized with great difficulty of breathing. On reaching home, she was immediately visited by a physician to one of our county hospitals, a gentleman well known to many of the Fellows of this Society. He at once ordered her to be bled, and largely bled, notwithstanding her puerperal condition and delicate state of health; and I cannot doubt, from what he told me a few days afterwards when I saw the lady, that the bleeding had saved her life. The cold air, we must suppose, produced congestion of the lungs, which were already prevented from acting freely by the upward pressure of the diaphragm, the necessary consequence of which must have been distension of the right side of the heart.

As an instance of this congested condition of the heart resulting, secondarily, from cerebral injury, I will relate the following case. A strong man, in the prime of life, fell, and in falling struck his head. He was brought to the hospital quite sensible. In the course of twenty-four hours, he became highly excited, his breathing grew difficult, and there appeared signs of extreme pulmonary congestion. The house-surgeon, led by these signs, would have bled the man, but waited for the surgeon's arrival—such is the dread we now-a-days have of the lancet. When the surgeon arrived, the matter was beyond his help, for the patient was dead. On examining this man's

body, I found the brain and its membranes in appearance perfectly healthy, with the exception of one red congested spot, the size of a florin, situated upon the upper and anterior part of the right lobe. This spot corresponded to the place where the injury had been inflicted on the scalp; the membrane was merely congested. There was assuredly no cerebral lesion here, such as would account for his death. The lungs were most highly congested with black fluid blood, and the right side of the heart was much distended. The heart itself, when emptied of blood, was small and covered with fat; and its muscular tissue was pale, flabby, and attenuated: the organ did not correspond to the size and vigorous look of the man's body. Now, is it not necessary to look to the heart here, rather than to the brain, as the immediate cause of death? We may argue thus:—that the violent blow on the head, in so far as it produced concussion of the brain, diminished the nervous energy of this organically enfeebled heart; and that, in consequence, the organ had become unequal to the task it had to perform ordinarily, and therefore permitted the blood to accumulate in it; the mischief being, no doubt, increased by defective action of the respiratory function. In a case of this nature, it is evident that venesection is the only remedy which can be of service; and is it not very probable that it would have assisted the organs, and freed them from a task to which they were unequal? The weakened heart was equal to its ordinary duties, but unequal to meet such an extraordinary occasion; and therefore it failed. Bleeding would have relieved the embarrassed organ.

I need not refer to any specific instance of the uses of small bleedings in the course of thoracic aneurisms, and of diseases of the heart, because every one will, I think, at once admit their great utility in relieving the painful and suffocating feelings which so often attend these diseases.

[To be continued.]

THE ESSENTIAL OILS IN THE TREATMENT OF PUERPERAL FEVER.

By H. DOVE, M.R.C.S.Eng., Norwich.

THE oil of turpentine has for several years been used in this city and neighbourhood in a great variety of forms of puerperal fever with much advantage, and occasionally with almost magic effect. It is usual to commence the treatment with half an ounce of turpentine and an equal quantity of castor oil, repeating a drachm of the former every four hours. I have seen the turpentine fail in cases well suited for its peculiar action, and I have also seen it add to the intensity of the disorder, and hurry on its fatal result.

Considering what a nauseous medicine turpentine is, that it irritates the kidneys, suffuses the eyes, and produces more or less head symptoms, I was induced to try, in its stead, the essential oils, selecting that of peppermint, and giving thirty or forty minims in divided doses during the twenty-four hours. I have now used this oil in seven cases, and in another case, the oil of caraway, with all the advantages and none of the disadvantages of the turpentine. The dull colour of the complexion, cedematous condition of the surface, and offensive evacuations usually observed in puerperal fever, point out the necessity of commencing the treatment with at least one stimulating dose of aperient.

For illustration, I will detail the most severe of the eight cases.

Mrs. G., a delicate woman aged 20, primipara, attended by a midwife, had an easy labour, and did well for four days; but on the fifth, she complained of chills, profuse perspirations, headache, intense thirst, vomiting and purging of offensive matters, and pain and distension of the abdomen. She was restless, her countenance was anxious, breathing short and hurried, tongue covered with a white fur, pulse 160; the lochia and urine were scanty; the skin was of dull colour and cedematous. A dose composed of tincture of rhubarb and castor oil, of each half an ounce, with five minims of the oil of peppermint in a little water, was immediately administered, and thirty minims of the oil of peppermint were given in divided doses, during the twenty-four hours. A spirit lotion was applied to the head, and mustard poultices to the abdomen.

On the following day, the vomiting had ceased; the headache was relieved, and the pulse was considerably reduced. The purging, thirst, and perspirations continued for a few days and gradually ceased. In this case convalescence was slow, differing from the others, in which convalescence was remark-