next of Koeberlé. They differ in the "catch", or mode of fixing the handles together; and in the joint—Koeberlé's being hinged, while Péan's blades can be separated for easier and more complete cleansing. Péan has a great number made straight, of different lengths, and others curved or angular. But they all, like Koeberlé's, have the great disadvantage of an open space between the blades, which admits of entanglement of one instrument with another, or of the passage of omentum or other structures. This was a fault in my own earlier instruments. It has been completely corrected in the later instruments made for me by Mr. Hawksley, without at all lessening the compressing power exerted on the vessel. In October 1878, Mr. Hawksley carefully tested the compressing power of different forceps when opened by a piece of leather one *millimètre* thick between the jaws of the forceps, and covering about four teeth from the points. The following table gives the result, as well as the force required to be exerted by the hand in closing the handles or fastening the catch or catches under each condition.

Pounds avoirdupois exerted by four teeth of the end of forceps when one millimètre apart.

Forceps.	First catch.	Second catch.
Koeberlé	—	3¼
Péan	8	12
S. Wells (old)	22½	—
Ditto (new)	12	22½

It may be seen that in my old instrument there is only one catch. And in my new one, the second catch only exerts the same power as the first catch of the old instrument. But this is six or seven times greater than the second catch in Koeberlé's—and nearly double that of Péan's. When only the first catch in Koeberlé's instrument is closed, the points are separated about half a *centimètre*, so that they only compress anything more than that thickness. I have used all these instruments, but find them much less handy than my own, in which the handles meet without leaving any opening between them. The rings do not admit the thumb and finger too far; and the end which compresses the vessel is so bevelled, that, if it be desirable to apply a

ligature, the silk will easily slip over the forceps, and not tie them together. Thus my instrument is not only useful in forcipressure and in

torsion, but enables the surgeon to dispense with any other kind of artery-forceps, if he wish to apply a ligature.

[To be continued.]

LOCAL EMPYEMA: ITS DIAGNOSIS AND TREATMENT.*

By SAMUEL WILKS, M.D., F.R.S.,

Physician to Guy's Hospital, and Lecturer on Medicine in its Medical School.

HAVING been requested to introduce some subject to your notice, it would not have been difficult to choose a case from our wards presenting some peculiar features of interest; but I thought it better, in a society established for mutual instruction, to select a topic of practical and every-day importance. Now, diseases of the chest, being most rife, are those which of necessity most concern us; and, for my own part, amongst the numberless affections of the lungs and their appendages which, during the last two or three years, have presented the most difficult problems of treatment, have been localised pleuritic effusions, or empyemata. The cases are common enough to have come before all members of the Association; and I judge, therefore, every one must have experienced some of my difficulties. If, however, any one have come here to learn the best method of their treatment, he will be disappointed. I may as well say, I do not come prepared to advance any special plan, but rather hope to learn something from members to help me out of my own difficulties.

As regards the nature of these cases: in a complete effusion of serum, the disease may come on insidiously, and the patient never seek advice

* Read before the South London District of the Metropolitan Counties Branch.

until the chest is full. In purulent effusion, the same slow formation may occur, but generally the patient is already ill, and the process going on in the chest is manifest. In localised empyema, however, the history of an acute attack is always to be found. (I shall speak rather dogmatically, so as to save time). A general acute pleurisy may have occurred, a partial absorption then have taken place, leaving a certain amount of matter locked up at the bottom of the chest.

And now I am going to make a statement, as the result of my experience, and which I particularly want sifted by the meeting. If, under any circumstances whatever of an inflammatory attack in the chest, under whatever name that attack may be called, there result localised dullness, with absence of breath-sound, and perhaps distant tubular breathing, an empyema may be safely suspected. This is an opinion which I have reached from the very uniform termination of a number of disputed cases, where these physical signs have existed. I mean this: let a patient have an undoubted acute pleurisy, and if, after the urgent symptoms have passed, there still remain the above physical signs in one part of the chest, some fluid may be considered to be left, and this is pus. If the case be one of pleuropneumonia, and there result after the acute attack the same local physical signs, then also an empyema is present; and more than this, if it have been thought from the nature of the attack that the inflammation was confined to the lung alone, and yet, after some time, when all other symptoms have ceased, there remain a localised dullness, with absence of lung breath-sound, it implies that a pleurisy had accompanied or succeeded the pneumonia, and, as a result, a local empyema is present. Thus, under all circumstances, with an history of an inflammatory attack, the result and the conclusion are the same.

This was not always my opinion, nor is it generally held; for it is mainly from contrary diagnoses having been given in several cases, where one uniform condition invariably turned out to be present, that this conclusion was forced upon me. I remember well how two of the physicians of this hospital—Dr. Addison and Dr. Hughes—used to contend over the question of consolidated lung and pleuritic effusion in certain cases; and I myself, for many years, used to teach that a lung which had become hepatized took a long time to recover itself, being led to this view by the continuance of the physical signs above-named, and by following the guidance of the best writers on pneumonia. I taught it, however, against my better judgment, always declaring that I could not imagine what this half-recovered lung was like, or what the results of an acute pneumonia could be, since I had no knowledge of such condition in the *post mortem* room. I recognised a chronic pneumonia after death; but this, not to mention the fibroid form, was the disease known as acute phthisis—a disease where no doubt the inflammatory process had progressed rapidly and was accompanied by pyrexia, but yet never had the acute nature of ordinary plastic pneumonia. These chronic pneumonias are found accidentally in persons who have been ailing three or four weeks with cold or cough, and who have never taken to their beds; they are acute diseases of the lung undoubtedly, in comparison with ordinary cases of phthisis, but yet never having the acute nature of the ordinary lobar sthenic pneumonia. This is a disease in which the lung becomes consolidated in thirty-six or forty-eight hours, and recovers itself as quick a time, leaving, I believe, nothing behind. This is positive knowledge gained by inspections; and yet, from physical signs such as I have mentioned, existing after the acute attack was over, I was fain to admit, as others had done, that weeks might elapse before the lung resumed its healthy state. I hold this opinion no longer, and believe that the slight undetected pleurisy which accompanied the pneumonia continued to progress, and that the physical signs observed were due to fluid compressing the lung, rather than the lung itself being consolidated. Of course, members must remember that I am dealing with only limited portions of the chest, where the diagnostic signs between consolidation and effusion cannot be so marked as where the whole side is involved. In denying that chronic disease is a result of acute, I do not speak of cirrhosis of the lung resulting from pleurisy.

Cases which I might mention to illustrate these facts are numerous; but I will only quote some instances which are fresh in my memory. A young man, after an acute attack in the chest, was sent up to London some weeks afterwards for advice as to the condition of his lungs. The right side was dull below, with loss of respiratory sounds, distant tubular breathing, and lessened vocal fremitus. Lately, he had begun to expectorate muco-purulent matter. One of the best known chest-physicians in London said he had a breaking-up lung. The case went on for some weeks, when death occurred, and a *post mortem* examination clearly showed that the lung was secondarily involved, the original disease being an empyema. The case was of interest to me, as I suggested thoracentesis in the first instance.

A young girl, after some acute attack of the chest, made a good recovery up to a certain point, when she was taken to a very good special

authority for chest-disease. He said the lung had not recovered from its consolidation, and he recommended her to Nice for the winter. While there, she began to cough up a quantity of purulent matter, and was brought home. It was then clear that she was evacuating an empyema through the lung. She gradually sank and died.

I am now occasionally seeing a young lady who, whilst at school four years ago, had what was called inflammation of the lungs, and I have no doubt that she had pneumonia. After recovery and returning home, being short-breathed, her chest was examined, and it was found that the lower part posteriorly was dull, with absence of good breath-sounds. Opinions were sought, and they were to the effect that the consolidated lung had not recovered itself. Nearly two years had elapsed, when she began to cough and expectorate; and I was asked to see her, on the supposition that the lung was now breaking up and she was falling into a consumption. Before visiting her, I expressed an opinion as to my view of the case, saying I had never yet seen a case of consumption following an acute plastic pneumonia. An examination of the chest proved the lung to be sound, but that there was a localised collection of pus at the bottom of the chest. This was emptied, and the expectoration ceased. Subsequently, the matter formed again and was brought up. This has been going on ever since, nearly four years having elapsed since the acute attack.

Some here may, perhaps, remember the case of a man who came into the clinical ward two years ago, under a colleague, with acute pleuropneumonia on both sides. After the acute symptoms had passed, dullness was still found at the posterior part of the chest on both sides, whilst the anterior part of the chest was resonant. He was constantly examined with the hope of finding an alteration in the physical signs, but they still remained the same. He was then transferred to my ward, where it was suggested that he had thickened pleura, but that recovery would eventually occur. He never, however, left his bed; and it was thought by my clerks that the lung was probably being disorganised, and that a phthisical condition was going on. My objection to this was, that I knew nothing of phthisis beginning as an acute pleuropneumonia. He gradually grew more feeble, and died at the end of nine months with universal lardaceous disease; he had a double empyema, confined to the posterior part of the chest, and compressed lung.

What is the natural termination of these cases? The one is the drying up of the abscess, and the frequency of this occurrence is one which ought to be ascertained. I myself have not often met with them on the *post mortem* table; but I think I have heard my colleague (Dr. Goodhart) express a contrary opinion. Then, again, their direct drainage through the lung, and this is common enough; but I am not sure that the mode is always the same. It must be well known that, whilst pleuritic abscess is discharging itself, there are frequently no physical signs of a fistulous opening in the lung; and, in a *post mortem* examination of such cases, we may seek in vain for a direct communication between the lung and the pleuritic cavity—at all events, there is no pneumothorax. So impressed was the late Dr. Barlow with this fact, that he surmised that the removal of purulent matter was not direct, but was formed in the bronchial tubes, and that the pleuritic abscess was only the pabulum for its growth. Another reason he gave in favour of this view was that patients with empyema sometimes were seized with a diarrhoea, and then got rid of their thoracic effusion. I might mention, in connection with this view, that the young lady whose case I have watched for four years has had several attacks of severe illness, commencing with rigors, passing on towards collapse, and ending with diarrhoea. We suspect that these attacks are pyæmic, or rather that some absorption or introduction of purulent matter takes place into the blood, causing the symptoms I name.

These cases, then, may end favourably by simply drying up or by discharging themselves through the lungs. It might be thought, therefore, that the better course was to leave them alone. This has hitherto been the practice, partly wittingly, but more often from an ignorance of the nature of the case. Having, however, seen in about a year five such cases terminate fatally, I hesitate to think that leaving them to nature is altogether the best plan.

The question of treatment is different from that which is applicable to a general pleuritic effusion. The indications for removal in this case are clear: the danger to life from pressure on neighbouring organs, or from the constitutional disturbance connected with a chest full of pus. In localised empyema, there may be no symptoms whatever; but eventually danger may accrue from the abscess involving the lung. What we want to know is the extent of this risk—how many cases are fatal in this way, compared with those which are evacuated successfully through the lung, and with those which simply dry up? I say nothing of a natural evacuation externally; for this I have seldom seen. Had time allowed, this might have been a point for discussion. I know such cases are spoken of; but it is difficult to understand why they should occur,

seeing that the lung would much more readily give way by pressure than the chest-walls. I do not seem to remember ever seeing an empyema make its way externally until the lung had first become compressed. To return to the question of risks of allowing a localised empyema to remain, I consider that they are great, having seen of late so many fatal cases. If this be so, the better method is to tap them. In the first instance, an exploratory needle may be used, and then a larger trocar, followed by a drainage-tube, or closing the opening. I think, in the first instance, I should be inclined to close the opening, as a partial evacuation might cause the absorption or drying-up of the rest, as is sometimes seen.

The question is: given an abscess, shall we, as the surgeon recommends in ordinary abscess, evacuate it externally, fearing it may take a dangerous course internally. Under both circumstances, it must take time for the cavity to close, seeing that on one side is the bony wall of the chest, and on the other indurated tissue formed by pleura and adjacent lung. The diagnosis of the abscess I put on the simple grounds already mentioned: a localised dullness and absence of breath-sounds, remaining after any inflammatory attack of the chest.

Mr. Goodhart has placed under the microscope some sections of lung adjoining an abscess, displaying its hardened walls, and showing, therefore, the difficulties under which closure must take place.

Finally, I must apologise for having spoken so dogmatically on some points, but time does not allow of argument; and offer a special apology to you, sir, considering I am making statements before one who is regarded a master in all matters relating to chest-disease.

CASE OF ABSCESS OF THE BRAIN FOLLOWING A BLOW ON THE HEAD.

By J. D. MACLAREN, M.D.,
Physician to the Glasgow Royal Infirmary.

THE following case of abscess of the brain, of which I preserved notes, was under my care in the Glasgow Royal Infirmary five years ago. It was brought to my recollection by reading Dr. Burney Yeo's case of abscess of the brain in the *BRITISH MEDICAL JOURNAL* of 7th June. It has many points of resemblance to it, and may be read with advantage along with it. I agree with Mr. Lister in thinking such cases "are only met with once in a lifetime".

Margaret L., aged 23, a sewing girl, was admitted to the Royal Infirmary September 17th, 1874, suffering from hemiplegia of the left side. On the 18th July, she met with an accident to which she ascribed her illness. A smoothing-iron accidentally fell from a height of three feet, and struck her on the vertex. Though stunned by the blow, she was not rendered insensible. Her scalp was cut in an antero-posterior direction, a little to the right of the middle line, an inch and a half in extent, and the anterior end of the wound was within an inch of her forehead. It bled profusely, but healed up in three weeks without further treatment than keeping it clean and covered. Ten days after the accident, and while the wound was still open, she began to lose the power of her left arm; a week afterwards, her left leg was affected; and, at the end of another week, she was completely hemiplegic, and continued so till her admission.

On admission, there was hemiplegia of the left side. Her mouth was slightly twisted to that side, but she could protrude her tongue in a straight line. Her intellect was unaffected. She complained of headache. Her pupils were normal. The lungs and heart were normal. The tongue was dry and slightly furred. Her appetite was much impaired. She complained of thirst, and vomited frequently. The bowels were regular. Temperature normal. A firm healthy looking scar was observed on the scalp at the seat of injury. The urine was normal. The palsy slightly abated, so that on October 6th it was noticed that she could flex her leg up to the abdomen, and could bend her arm till she could almost touch her shoulder with the left hand, and she could close her fist. On October 17th, she could stand and partially bear her weight on her left leg, but could not walk without assistance. Her headache was often very troublesome, however, and came on in agonising paroxysms, the pain being chiefly confined to the forehead. She often vomited suddenly and easily, and apparently without any connection with her food. Towards the end of November, the headache had diminished, but her palsy increased. On December 5th, she had a well-marked epileptiform convulsion, lasting for ten minutes, with frothing at the mouth and tonic spasm of the fingers. She continued in a semicomatose condition for twelve hours afterwards, with slight delirium, and occasional spasmodic movements of the hands and dilatation of pupils. Another similar fit occurred next day, with occasional squinting. On the 11th, she had two convulsions, and lay in a semi-

conscious state in the interval. On the 12th, she had three fits, and died on the evening of that day, nearly five months after the receipt of the injury.

The necropsy took place on December 14th. On removing the scalp, a depression was noticed on the skull corresponding to the situation of the scar. A portion of the external table of the skull was driven into the diploë, and lay as a sequestrum. The internal table of the skull was intact, except at one point where there was an opening sufficient to allow a probe to pass. No pus could be observed in the neighbourhood of the injury. It was the frontal bone which had sustained the injury, at a point midway betwixt the supra-orbital ridge and the coronal suture, and a little to the right of the middle line. The depression was about an inch and a half in length, and three-eighths of an inch in breadth. The dura mater was generally somewhat hyperæmic, and slightly adherent to the arachnoid. The surface of the brain was dry and sticky, and the sulci were glued together slightly. The surface of the right hemisphere was more prominent than the left; and on separating the edges of the longitudinal fissure, that side was seen to bulge beyond the middle line. The convolutions over the middle right lobe were rather pale-coloured, and slight fluctuation could be detected. On slicing across the right hemisphere above the level of the corpus callosum, an abscess was revealed in the white matter of the brain, enclosed in a well-marked pyogenic membrane. The pus was green and of creamy consistence; it had no bad odour, and was about two or three ounces in amount. The brain-substance around the abscess was slightly altered in appearance, and the right ventricle was hyperæmic. The right corpus striatum was slightly softened. The other parts of the brain were normal.

TRAUMATIC OPHTHALMITIS: TREPHINING THE SCLEROTIC: RELIEF.

By W. SPENCER WATSON, F.R.C.S.,
Surgeon to the Central London Ophthalmic Hospital, etc.

THE following is the history of a case of traumatic ophthalmitis with eyeball-tension following the operation for juvenile cataract, in which Dr. Argyll Robertson's operation of trephining the sclerotic was performed with relief of the more urgent symptoms.

A. P., a delicate lad aged 14 years, with juvenile cataracts and a congenital deformity of the left arm, was operated on by the needle-operation in February 1879. Acute ophthalmitis set in, and treatment by mercurials and the local application of belladonna produced some improvement, but the eyeball remained tense and congested, and with doubtful perception of light, but great photophobia, till May 2nd. On that date, the friends having resisted the proposal to perform enucleation, which was strongly urged upon them, I determined to trephine the sclerotic as an alternative. The lower and outer quadrant of the sclerotic, between the outer and lower recti muscles, was the spot chosen, and a disc of sclerotic was removed. The patient was under the influence of the mixed anæsthetics but was not very quiet, and the trephine penetrated the choroid as well as the sclerotic, allowing a protrusion of the vitreous body, which was tolerably healthy in appearance. Part of the protruding vitreous was cut away by the scissors. No bad symptoms followed, and the eyeball at the present date (June 11th, 1879) is free from congestion, though there is a return of tension, which remained at first normal. Photophobia has disappeared, and there is now some little improvement of vision, so that he can count fingers held between his eye and the window. The operation of trephining has, in this case, been so far a perfect substitute for the more severe measure of enucleation. The latter may possibly at some future time be required, but for the present the danger of sympathetic irritation of the fellow eye is not imminent. The relief of tension was at first most complete, and the patient himself and his friends are convinced that the operation has been highly beneficial to him.

Doubtless the measure is one which is of a temporising character; but in cases in which the consent of the friends to the removal of the eyeball cannot be obtained, it is a matter of great moment to be able to gain time, and especially if a tangible benefit can be relied upon as in the case related. An eyeball in which the tension is excessive is as a rule much more likely to be dangerous to its fellow than one in which the tension is normal. If, by trephining, the tension can always be relieved, as I believe it can, there is a good reason for preferring it to less certain measures in traumatic cases of ophthalmitis, especially when there has been somewhat prolonged iritis with matting together of the iris and ciliary processes. In such cases, attempts at iridectomy almost always fail, and sclerotomy is hardly less likely to succeed. Hence in