chest was carefully examined on that day, both anteriorly and posteriorly. The percussion note was good all over. Beyond slight feebleness of the breath sounds in the lower part of the left axillary region, nothing abnormal was found. As to the circulatory system, the cardiac impulse was diffused over the left third and fourth and fifth interspaces. There was a retraction of the third and fourth spaces synchronously with an elevation of the fifth space over the apex-beat. All were systolic in rhythm. There was no thrill and no epigastric pulsation. The apex was in the fifth interspace, just outside the vertical nipple line and four inches from the centre of the sternum. The upper limit of superficial cardiac dulness was at the level of the lower border of the third rib. The limit to the right was one inch to the right of the mid-sternal line. On auscultation at the apex the first sound was heard to be impure and of a low pitch. It was difficult to say whether it was reduplicated or whether a soft systolic murmur accompanied it; the second sound was accentuated. The sounds at the tricuspid region had similar characteristics. At the aortic cartilage there was a faint systolic murmur, the second sound being normal. The first sound was faint, but pure, at the pulmonary cartilage, and the second was accentuated. The rhythm of the heart was quite regular. On Feb. 28th there was no change in the condition of the patient. He still had a slight cough, with expectoration of small quantities of mucus. The pain in the left side still persisted, but no physical signs could be made out in connexion with it. He was quite convalescent for the last three weeks, but was kept in the hospital for observation. On March 8th he was sent to the Southport Convalescent Hospital.

Remarks.—From the history of the case and from the physical signs present whilst the patient was in hospital it will be seen that there was no evidence of pneumothorax on either side and that the air occupied the subcutaneous tissues of the trunk, neck, and face only. The interesting question is, How did the air escape into its abnormal position in the absence of external injury? There are three ways in which this could happen: (1) by rupture of a normal pulmonary vesicle, described as occurring in whooping-cough; (2) by rupture of a vesicle adherent to the parietal pleura; and (3) by ulceration through a bronchus of a suppurating mediastinal gland. The first explanation is out of the question entirely, there having been no severe attacks of coughing. More is to be said in favour of the second. A very definite symptom throughout the whole course of the illness was pain under the left nipple, increased by deep inspiration or by coughing, but I could never hear a pleuritic rub or any other adventitious sound over this area. Taking into account the outward displacement of the apex-beat of the heart, the absence of pleuritic friction, the history of a previous attack in this same area eight years previously, the impaired movement of the left half of the chest, and the diminished breath sounds over the painful area, the conclusion presents itself to one's mind that there is some adhesion, and probably retraction, of the pleurae at this point. It is quite possible for the leak to have arisen here in consequence of a severe cough. To my mind, however, the third is the most likely explanation. There is a marked family history of phthisis, and the boy is probably of a tuberculous diathesis. The succession of abscesses in various parts of the body points to this conclusion and is also presumptive evidence of there having been a suppurating gland in the mediastinum, which worked its way through the wall into the lumen of a bronchus. The escape of pus into the bronchus would set up a cough at once, and air would then be forced into the mediastinal tissues. Every successive cough would increase the amount extravasated. I could gather no history of purulent sputum with which to support this idea. All that the boy noticed about the sputum was that it was frothy. The perforation, once formed, seems to have healed up rapidly after the first day or so, and the air in the subcutaneous tissues was absorbed gradually without there being any sign of irritation from its presence.

GLANDERS.—At the instance of the London County Council, a cab proprietor was summoned at the Westminster Police Court, on the 28th ult., to answer to the charge of neglecting to give notice of having a glandered horse in his possession. The evidence given in support of the prosecution was sufficient, in the opinion of the magistrate, to establish the validity of the charge, and the defendant was fined £25 and 5 guineas costs, or two months' imprisonment—a heavy penalty, but one only commensurate with the gravity of the offence.

Clinical Notes : MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

ON THE USE OF SULPHUR IN SURGERY.

BY W. ARBUTHNOT LANE, M.S., F.R.C.S. ENG.,
ASSISTANT SURGEON TO GUY'S HOSPITAL AND TO THE
HOSPITAL FOR SICK CHILDREN.

IN 1893¹ I published a short paper entitled "How far is Sulphur likely to be of Service to the Surgeon?" and in it I described the two first cases of very extensive tuberculous disease of the hip and elbow joints, in which it was used with the most satisfactory results, since both recovered rapidly and perfectly under this treatment. The conclusions I summarised in that paper are as follow: (1) sulphur applied locally appears to exert no deleterious effect on the health of the individual; (2) it gives rise to products which are powerfully caustic in their action. Therefore it must be used in small quantities and with discretion; (3) it destroys all organisms whether free in a space or growing in the surrounding tissues; (4) it acts much more powerfully upon recently incised structures than upon granulating surfaces; (5) its action is rendered more uniform and general and less violent by mixing it with glycerine; and (6) if used in any quantity, the drug must be removed within a day or two and irrigation subsequently adopted. Since writing that paper I have used sulphur very largely, not only in tuberculous conditions, but in other infective processes, and with the most satisfactory results. The rule I adopt in the treatment of extensive tuberculous disease with much destruction of bone is, if there is a well-defined cavity in the bone, to pack it with iodoform in the manner described in a previous paper,² but if there be no such suitable space, and if it be impossible to remove with certainty all tuberculous material, I place an emulsion of glycerine and sulphur in the cavity for twenty-four hours and then irrigate daily for a time with dilute perchloride of mercury lotion or with a sterile normal saline solution. In the case of recent foul wounds with extensive laceration and bruising, its action is perhaps seen to best advantage. The following notes of such a case illustrate this very well.

A man aged thirty was admitted into Guy's Hospital under my care on Feb. 11th of this year. He had been cleaning a window, when he fell forty feet. His forearm was transfixed on a spike of the area railings, and he was suspended upon it. The skin and muscles of the forearm were extensively lacerated along the whole of its length, and portions of his coat, which was very dirty, were embedded amongst the pulped muscles. Such portions of the muscles as were very much mashed and dirtied were removed. The ulnar artery was uninjured. The damage to the soft parts was so extensive, and the fouling so considerable, that I believed that, however thoroughly the parts were washed with germicidal lotions alone, amputation would become necessary at no distant date. Therefore, after cutting away some parts, cleaning up others, and removing any foreign materials present, gauze, saturated with an emulsion of sulphur and glycerine, was introduced everywhere in and between the lacerated tissues. At the end of twenty-four hours this was removed, when the wound was found to smell strongly of sulphuretted hydrogen, and the tissues were covered with a soft black slough. Irrigation with dilute perchloride of mercury solution was used daily, and the intervals in and between the lacerated muscles packed with cyanide gauze. The slough soon separated, leaving a healthy granulating surface. The highest temperature recorded was 100.6° F. in the evening following the operation.

I have little or no doubt in my own mind that such a result could not have been obtained by the germicides in general use. In the case of lupus no application, in my experience, is so perfectly satisfactory in its results as sulphur, whether employed in its most active form as the powder, or more gradually, in the form of an emulsion or an ointment. In every case in which I have used it, cure has rapidly resulted, with practically no destruction of tissue other

¹ Medical Week, Dec. 8th.

² One of the Best Applications of Iodoform in Surgery, THE LANCET, July 15th, 1893

than lupoid. In the case of cancerous or sarcomatous ulceration, the destruction of the soft parts can be regulated and determined very accurately. Unlike the escharotics in common use, it has practically no effect on healthy cutaneous or mucous surfaces, but requires the action of a granulating or raw surface to determine the formation of sulphurous and sulphuric acids, which are apparently the agents which influence the vitality of the organisms and tissues with which they come in contact. I have also found sulphur most useful in the foul ulcerative stomatitis which is so common among the children of the poor, and which resists so obstinately such local treatment as is usually adopted. In such cases, if gauze or wool be dusted abundantly with the finely powdered drug, and this be retained in firm contact with the foul ulcerated surface for an hour or two, sufficient destruction results to clear the surface of its infective organisms, and it then heals rapidly. Should one application not produce a sufficient result, a second or even more may be required, the number depending on the extent and locality of the ulceration, the facility with which the plug can be retained in position, &c. Also in the foul impetiginous ulcers in children, the application of sulphur is similarly most effectual in the destruction of the micro-organisms producing these conditions. I might multiply very largely similar examples of the good results that may be obtained by the action of sulphur used in this manner, but I think that I have given enough to induce other surgeons to give it a good trial. Sulphur, like iodoform, becomes active as a germicide, and is very considerably more powerful in its action than iodoform only when in immediate contact with a raw surface, the living tissues causing it to form certain combinations with hydrogen and oxygen.³

St. Thomas's-street, S. E.

HYDATID OF LIVER; OPERATION; RECOVERY.

BY ROBERT JONES, F.R.C.S. EDIN.,

HONORARY SURGEON, ROYAL SOUTHERN HOSPITAL, LIVERPOOL.

THE patient, a woman aged twenty-one, was sent to me by Dr. Evans of Festiniog through Dr. Carter, who had diagnosed hydatid of liver. I first saw her on May 8th, 1893. She then gave the following history. About six months previously she noticed a swelling below the lower border of the ribs on the right side. It caused no pain or inconvenience, and seemed to her about the size of a hen's egg. The tumour developed rapidly, but she was able to go on with her work, paying but little attention to it. She took her food well, and up to five weeks before my examination of her she was in absolutely good health and suffered no local disturbance. She then had rheumatic fever, from which she made a rapid recovery. Her family history was good. It should be noted that three dogs were kept where she was a servant, two of them living in the house.

On examination the patient looked healthy, with rosy cheeks and bright eyes. The abdominal swelling was dull on percussion, and extended about four inches in every direction, taking its centre to the left of the right hypochondrium. It was uniform in contour and moved up and down during respiration, the skin not being affected beyond being tense. The mass conveyed a thrill to the hand on palpation, but was non-pulsatile and no bruit could be heard on auscultation.

I transferred her for operation into the Royal Southern Hospital. An incision was made on May 17th in the middle line of the abdomen about three inches in length, from about one inch and a half below the ensiform cartilage. All bleeding was stopped and the peritoneum was opened to the extent of about one inch. The tumour presented itself at the wound, could be moved freely, and had formed no adhesions. It was found to have occupied the liver. Some of the contents, which were of the usual hydatid character, were removed by aspiration. An incision, about three-quarters of an inch, was then made into the cyst and the finger introduced for the dual purpose of preventing leakage into the abdomen and of introducing the cyst wall into the abdominal wound. One hundred and twenty ounces of fluid then escaped, and even then the cavity was not emptied. The incision into the cyst was then enlarged and attached to the abdominal

parieties by a double set of sutures, the inner set being composed of a continuous stitch and serving to fix the hepatic incision to the parietal peritoneum. By the guidance of the finger placed within the cyst a few outside interrupted sutures were so placed as not to perforate the whole thickness of the cyst wall, these serving both to lessen the drag upon the abdominal wound and to extend the area of opposed peritoneum. The stitching being completed large portions of the cyst wall were removed by forceps, and the cavity well washed out by quantities of mild warm boracic lotion. A large-sized drainage-tube was inserted and the wound was dressed in the usual way. With the exception of an occasional elevation of temperature the subsequent progress of the case was in every way satisfactory. The cavity was regularly washed out, and for some four or five months continued to discharge, and for the first six weeks portions of the cyst wall were found in the dressings.

On Sept. 2nd the patient was discharged, cured.

Liverpool.

A Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

LONDON HOSPITAL.

A CASE OF LOCALISED SUPPURATIVE PERITONITIS WITH GASEOUS DECOMPOSITION.

(Under the care of Mr. MCCARTHY.)

THIS is an example of an acute form of abdominal abscess to which the term "tympanitic" is sometimes applied. The operation did not throw any light on the causation of the disease, and that must remain obscure, especially as the vermiform appendix could not be felt. We occasionally meet with somewhat similar cases in younger people in which the appendix is also probably the cause of the trouble, but which close satisfactorily, and nothing further occurs to help in the diagnosis. The other cases mentioned by Mr. MacCarthy render the series of considerable interest.

In December, 1893, Mr. McCarthy was requested to see a man who had been admitted on the medical side of the London Hospital three days previously with abdominal trouble. The patient, a man aged thirty-two, with an excellent family and personal history, had been suddenly seized with severe abdominal pain followed by vomiting. For this he was admitted into the hospital. His bowels acted with purgatives and enemata, but the pain and vomiting persisted. The vomited matters consisted of food and bile-stained fluid. His temperature was normal. When seen by Mr. McCarthy he was in great pain and writhed about in bed, so as to render examination difficult. When he was induced to lie still for a few seconds the appearance of the abdomen was remarkable. Above the umbilicus the abdomen was slightly retracted, and below the umbilicus it was distended, especially in the centre, which from the umbilicus to the symphysis pubis presented an ovoid prominence, such as would be caused by a greatly distended bladder. Percussion was impossible, as the slightest touch caused great pain, but the appearance and history of the patient suggested localised suppuration, with gaseous decomposition. The patient having assented to an operation if it should be thought requisite was anaesthetised. The percussion note over the central prominence was then found to be very tympanitic. A catheter was passed but the bladder was empty. The abdomen having been shaved and washed with carbolic lotion (1 in 20) a vertical incision for about two inches was made through the skin in the middle line midway between the umbilicus and symphysis pubis. This was carried down layer by layer until the peritoneum was exposed. When this was punctured a quantity of fetid gas escaped. When the opening was enlarged about a pint of putrid pus

³ Dr. Ray-Pailhade, from experiments on the action of sulphur in yeast &c., concluded that there exists in living tissues a substance which he calls philothion, which can combine with sulphur. Particulars as to his experiments will be found in his *Recherches Expérimentales sur le Philothion*.