tered together, and had evidently taken place from without. The mucous membrane around them was quite healthy. The liver and spleen were healthy, and no other viscera presented any evidence of disease.

In connexion with the last case I may recall the facts of another (Case 3) that was under my care in the hospital some years ago, but of which unfortunately the notes have been mislaid or lost. The patient was a tall young man, of about nineteen, with rickety curvature of the tibiae and other bones. He had, however, generally had good health, until, I think, a few months before I saw him, when he began to suffer from pain and tenderness below the left ribs. He went for a time into one of the large metropolitan hospitals, and there the tumour, which was discovered in the splenic region, was taken for the spleen. On his discharge at the end of a month or two no material change had taken place in his condition, and his disease was still assumed to be splenic enlargement. On admission into St. Thomas's a tumour was recognised, which from its situation and form might certainly have been taken for the spleen. But it was, as in the last case, unaffected by the movements of the diaphragm, and evidently adherent to the abdominal walls. So far the case was an almost exact counterpart of the one just narrated. But there were also manifest bulging of the lower ribs on the left side and of the adjacent part of the abdomen, and a great sense of resistance: phenomena which are always strongly suggestive either of an abscess or of a new growth, and of its incorporation with superficial parts. Accordingly I came to the conclusion that the patient was suffering from a new growth or abscess, arising in the spleen or its neighbourhood, but involving the abdominal walls. I forget whether there were any additional facts in his history, or any peculiarities of temperature or symptoms when he first came under my care, to lead me to prefer one of these alternative views to the other. I also forget whether I was tempted to make an exploratory puncture for diagnostic purposes. But I know that after a time I had an incision made into the swelling, that a large quantity of thick pus was evacuated, and that at the end of a few weeks the patient left the hospital well.

I do not know that one learns any very important special lessons from the above cases. But there are two or three points suggested by them to which I may call attention in a few words. In the first place, in the two cases that ended fatally, the cause of the circumscribed peritoneal suppuration was found to be perforation of one of the hollow viscera. It may be assumed, from this fact, as well as on other grounds, that abscesses in the upper part of the abdomen, not due to abscess of the liver, are largely dependent on this cause. In the second place, all the cases suggest the importance of evacuating the contents of abscesses in this situation as early as possible. Abscesses here, if left wholly to nature, are liable to burrow in various directions, to discharge themselves into and through various organs, and to lead in the course of their extension to irreparable mischief. By a free external opening made at an early period such disastrous consequences would obviously be to a large extent averted. And, in the third place, it seems clear that the recognition of abscesses in the upper part of the abdomen is often extremely difficult, if not impossible, and that to diagnose them correctly demands the most careful and continued observation, and to treat them effectively calls for both skill and courage. I make these latter remarks without intending to imply that in dealing with my own cases I showed conspicuously any of the qualities here specified.

I venture to add, in conclusion, a brief account of a post-mortem examination which I made many years ago on a girl whose case in many respects obviously resembled that with which I commenced my lecture. Unfortunately no clinical account has been preserved. But the post-mortem record shows clearly that she had an ulcer of the stomach, which had perforated that viscus; that as a result of this perforation circumscribed peritonitis had ensued, with the formation of fetid pus in the neighbourhood of the spleen; and that the circumscribed abscess had both penetrated into the substance of the spleen and perforated the diaphragm. It is interesting, however, to note that the fetid abscess was separated from the perforation, which had doubtless caused it, by a tract of simple inflammatory adhesion; that although the abscess had perforated the diaphragm there was reason to think that inflammatory changes which were present in the chest had not been caused by this perforation; and that gangrenous cavities whence fetid pus might well have been

expectorated were present in the bases of both lungs. The case is further interesting because the abscess connected with the spleen was mainly in front of it, and must, if it had been recognised during life, have presented the local features exhibited in my last two cases.

CASE 3.—C. H.—, a girl, aged eighteen, was admitted into St. Thomas's Hospital on March 27th, 1854, and died there on April 6th. At the autopsy the pericardium and heart were found to be healthy. The lower lobe of the left lung was adherent to the diaphragm and sides of the chest by a layer of recent lymph; it was more solid than natural, congested, and soft, and presented numerous patches, from the size of a filbert downwards, in which the tissue was solid or broken down into a stinking gangrenous pulp. The upper lobe of the left lung was healthy. The upper and middle lobes of the right lung were healthy, but the lower lobe was in the same condition as the left lower lobe, though less extensively affected, and recent lymph was deposited on its surface. Abdomen: All the peritoneal membrane below the stomach and great omentum was healthy; but the left lobe of the liver was attached to the diaphragm by recent adhesions, and the under surface of the anterior half of the right lobe, and the whole of the under surface of the left lobe were similarly united to the anterior surface of the stomach and to the spleen. On separating the liver from the stomach, a circular opening, about half an inch in diameter, was found in the anterior wall of the stomach close to its lesser curvature and midway between the oesophageal orifice and the pylorus. On separating the spleen from the parts surrounding it a circumscribed cavity was laid open, the walls of which were formed by the anterior half of the spleen, the diaphragm, and the cardiac end of the stomach. This cavity contained a considerable quantity of thick greenish fetid pus and was lined by soft discoloured lymph. It was further found that a diverticulum of the abscess extended into the substance of the spleen, and that a little above this point the diaphragm presented several perforations due to ulceration. Direct communication between this abscess and the pleural cavity appeared to have been prevented by adhesions between the diaphragm and ribs; and further no direct communication could be traced between it and the ulcerous perforation of the stomach. The mucous membrane of the stomach was generally healthy, but at the seat of perforation it was destroyed to a considerable extent. The ulcer was one of the ordinary character, and partly cicatrised. All the other organs were healthy.

ON A

METHOD OF DEMONSTRATING THE GREAT INTEROSSEOUS LIGAMENT BETWEEN THE ASTRAGALUS AND OS CALCIS.

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THE fore part of this ligament is easily exposed on its outer aspect in the ordinary dissection of the dorsum of the foot, and useful views of the concealed part of the ligament may be obtained by transverse vertical sections made with the saw through the astragalus and os calcis; but even these two methods combined fail to give a satisfactory view of the ligament, or to enable us to see clearly the functions of its several parts. The following is the method I employ:—

Take an ordinary ligamentous preparation of the tarsus. With the saw divide the astragalus into three parts, so that the narrow middle portion shall carry the entire upper attachment of the ligament. The middle portion should be about one-third of an inch in breadth, but a little broader (5 lines) in front. The inner cut should, in front, be close to the inner edge of the cartilage of the head, leaving a shaving of the neck with the middle piece, and, behind, be at the hinder end of the internal malleolar facet. The outer cut should extend from the fore end of the external malleolar facet to close to the inner edge of the groove for the flexor pollicis tendon. The sections should be vertical. Only a narrow margin of bone remains on each side of the ligament, so that the attachments and functions of the ligament may be clearly seen. If the section prove to be too thick below, it may afterwards be sloped near the ligament. The demonstrator, however, will soon learn how to make these sections accu-

ately and easily in the dissecting-room. The lateral portions of the astragalus should be left hanging to the os calcis by portions of the lateral ligaments of the ankle, or attached by catgut, and thus be readily replaced.

We now see the whole extent of the interosseous ligament from before backwards, and its length, direction, and thickness at different parts, and can demonstrate the functions which it performs in relation to the various movements of the astragalus or os calcis. The method is useful also from the way in which it presents for study the joints on either side of the interosseous ligament, and enables the parts to be again replaced. In making a dried preparation of the ligament by the above method, the lateral portions of the astragalus may be attached by a catgut cord, piercing them, and dipping into the os calcis below the ligament, so that when the cord is pulled the three pieces go into position.

I may mention also a method of exposing the interior of the ankle-joint, which may be combined in the same preparation with the above method of exposing the interosseous ligament. Having dissected in the usual manner the ligaments of the ankle and tarsus, divide the portion of tibia by an antero-posterior vertical median cut with the saw. If it is for the ankle-joint alone, the preparation may include several inches of the tibia; if it is for a preparation to show also the interosseous ligament by the above method, half an inch of the tibia will suffice and be more convenient. The two side pieces of the tibia now fall asunder, displaying the whole interior of the ankle-joint and giving an inside view of the ligaments and their points of attachment. If the astragalus be then divided by the above method, the lateral ligaments of the ankle serve for the lateral pieces of the astragalus to hang on by. The three pieces of the astragalus may be replaced, and then the two sides of the leg, and thus the whole built up again. Such a preparation, with the facility which it affords for opening out the joints and again replacing the parts, will be found very useful in the anatomical school.

I have shown these methods for many years and to various teachers of anatomy, but, so far as I am aware, they have not yet found their way into any of the text-books.

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A CONTRIBUTION TO THE SUBJECT OF CEREBRAL LOCALISATION.

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IN the *Revue de Médecine* for May, Charcot and Pitres published the first part of an essay, entitled "Critical and Clinical Study of the Doctrine of the Localisation of the Motor Centres in the Cortex of the Cerebral Hemispheres of Man." They state, to begin with, that they purposely set aside all the results of experimentation on animals, and that they seek in clinical and post-mortem records to find an answer to the question, "Can lesions of the cerebral convolutions in man produce disorders of movement; and, if so, does any constant relation exist between the seat of the cortical lesions and the distribution of the paralytic and convulsive phenomena which are consequent on them?" For the purpose of answering this question they have collected some 200 cases, which have been published during the last four years. These they divide into four categories—1. Destructive lesions of the cortex outside the motor zone, and unaccompanied by disorders of movement. 2. Destructive lesions of the motor zone, accompanied by paralytic phenomena. 3. Observations bearing upon the relation between partial epilepsy and irritative lesions of the cerebral cortex. 4. Observations which contradict, or which have been given out as contradicting, the theory of cerebral localisation.

After dealing with Category 1 in the *Revue de Médecine* for May, they have published in the June number cases belonging to the second—viz., lesions of the motor zone; and in subsequent numbers of that journal they propose considering the remaining two divisions of the subject. During the last five years or so I have watched, as closely as I could without having charge of in-patients, the cases of nerve disease which have been admitted into St. Thomas's Hospital, and as demonstrator of morbid anatomy,

performing the post-mortem examinations on three days in the week, I have tried to collect evidence which might either disprove or support the theory of cerebral localisation. This appears to be a fitting occasion for publishing the results of my observations, and I have to thank several of my colleagues for their kindness in allowing me to make use of cases which were under their care. My contribution to this question consists of no more than six cases, for I have selected those only which presented lesions affecting the supposed motor zone—viz., the two central ascending convolutions. Many other instances of cortical lesions have come under my notice, but they were either confined to other regions of the cortex, or they were complicated by some deep-seated disease, and were thus inappropriate for the question under consideration. But though the cases are few in number, it is curious how completely they happen to illustrate the lesions of this portion of the cortex. Thus, (1) in a case of paralysis of one leg; (2) paralysis of one arm; (3) paralysis of the face and tongue, with aphasia; (4) paralysis of the arm and face, with aphasia; (5) paralysis of arm and leg, and in a slight degree of the face and tongue; (6) paralysis of arm, leg, face, and tongue. I have at each post-mortem examination marked on a diagram the area of cortical disease, except in Case 3, in which for some reason I omitted to do so.

CASE 1. *Tubercular meningitis, with large crop of tubercles occupying the upper extremity of the two central convolutions of the right hemisphere, and producing left-sided convulsions and paralysis of the left leg.*—E. A., aged nine, came under my care as an out-patient at St. Thomas's Hospital on September 15th, 1881. The assistant house-physician first saw the girl, and my attention was not called to her condition until some six weeks later. The diagnosis formed by him was hysteria (?). It appeared that she came of a fairly healthy family in which there were no known hereditary diseases, and that she herself had always had good health, except on one occasion, when she had been in hospital for fourteen days with blood-spitting. During the six weeks before she came to me as an out-patient she had had three peculiar attacks, in which she suffered from great giddiness, temporary loss of sight, and convulsions of the left arm and leg. After the fit passed off the left arm and leg were paralysed, and remained so for about an hour and a half. She then regained power, except in the left leg, which "dropped." In the intervals between these attacks she appeared to be fairly well, but she was getting worse when my attention was called to her on Oct. 27th, 1881. She was then evidently ill; she had had severe pain in the head for ten days, had been confined to bed and had vomited three times, but had had no convulsions. She was drowsy, her bowels were costive, and her temperature elevated. She had no loss of sensation, but had evident paresis of the left leg. There was no optic neuritis. The pupils were rather dilated and equal, acting well to light. There was no rigidity and no paralysis, except of the left leg. The patellar and plantar reflexes were normal. Temperature 102° F. Taches cérébrales well marked. Urine: specific gravity 1040; no albumen. The chest moved well, and the lungs presented no abnormal phenomena. Respiration 24. Heart sounds and area of dullness were natural. Pulse 84, and regular. Bowels confined; appetite bad; tongue dry in centre. She was now admitted into the hospital under Dr. Payne.—Oct. 31st: Did not appear so well, and was suffering from great pain in the head. The temperature was 100·8° F.; pulse 108, and feeble.—Nov. 1st: Temperature 102° F. Some photophobia, and diplopia when she looked straight in front of her; this was not constant. Pupils dilated and equal. Face a little flushed. Pulse 108, regular.—2nd: The pain in the head was worse, and the patient more drowsy. Temperature 101·2° F.; pulse 120. Tongue dry and brown.—3rd: Drowsiness still increasing; pain in the head better.—4th: Very hard to rouse the patient. Limbs flaccid, drop when raised; neither eye completely closed; partial paralysis of left external rectus. The tongue protruded markedly to the left. Pupils dilated, and not acting to light. Pulse 114, regular; respirations 36. Taches cérébrales well marked.—5th: The patient was unconscious; conjunctivæ insensible.—6th: The patient was very drowsy, but not unconscious. Some ptosis of right upper eyelid, and incomplete paralysis of both external recti. No optic neuritis, but the retinal veins large and tortuous. Temperature 98·6° F.—7th: Temperature 102·4°; pulse 120; urine passed involuntarily in bed. At 11 P.M. she was found lying unconscious, with the head arched backwards, the pupils dilated and equal; respiration 66;