scarcely answer when spoken to, and would not take nourishment. She had diarrhoea, anorexia, and the breasts were empty. The temperature and lochia were normal. She was kept quiet and the baby was taken away; large doses of bromide of potassium and aromatic spirit of ammonia were given, after which several hours' rest were obtained and the symptoms quickly passed off. The breasts filled and the patient became quite well.

My object in recording these facts is to show that the shock of delivery must have been very severe for the patient. The text-books give little information on this point. Herman's "Difficult Labour" does not mention it. Galabin (p. 93) mentions that "the male head is more firmly ossified at birth than the female skull, is half an inch more in circumference; hence arises greater protraction of labour in the case of males, more frequent necessity for artificial aid, and greater mortality both to mothers and children." Cazeaux and Tarnier's "Theory and Practice of Obstetrics," vol. iii., p. 839, states: "To this cause, dystocia, our colleague and friend, Dr. Joulin, Adjunct Professor of the Faculty of Medicine at Paris, devoted a long chapter of his thesis for the Concours. According to him the Germans admit that trouble may be due to the size of the head alone, besides which they also call attention to a peculiarity of the ossification little known in France, which adds to the difficulty of the situation—viz., the development of Wormian bones in the fontanelles causing their solidification." "It is very hard to determine what ought to be done in cases of this kind; it is almost impossible to become aware of the size of the child whilst it is still within the womb, so that the practitioner who finds the progress of the case arrested in an apparently well-formed pelvis will very probably decide upon active interference before the true cause of the delay is detected and apply the forceps or cephalotribe according to the amount of difficulty which the size of the head shall present to its extraction" (Joulin). "The fontanelles at inferior angles of parietal bones close soon after birth. The posterior fontanelle closes in a few months, the anterior remaining open until the first or second year. Sometimes this fontanelle remains open beyond two years, and occasionally persists throughout life" (Gray).

I shall be glad to know if this condition is often met with and the best means of its diagnosis, as the guides to the fontanelles—viz., the sutures—were in this case closed.

Finsbury Park-road, N.

A NOTE ON THE INFLUENCE OF ANTITOXIC SERUM ON THE TUBERCULO-OPSONIC INDEX.

By T. R. BRADSHAW, M.D. DUB., F.R.C.P. LOND.,

PHYSICIAN TO THE LIVERPOOL ROYAL INFIRMARY; EXAMINER IN MEDICINE IN THE UNIVERSITY OF LONDON, ETC.

WHILE preparing a paper on the opsonic index, a paper which was read jointly with Dr. E. E. Glynn on May 3rd before the Liverpool Medical Institution and which will be published in full in the summer number of the *Liverpool Medico-Chirurgical Journal*, I made a number of estimations for the purpose of ascertaining for myself the fact generally accepted that the tuberculo-opsonic index is practically the same in all non-tuberculous individuals. On one particular day I determined the index of seven persons, free from all suspicion of tubercle, four medical men, two nurses, and a young man, D., in my ward who was recovering from an attack of neuritis, the result of diphtheria, for which he had been treated with antitoxic serum about three months before. The index of the first six worked out well within the accepted normal limits of variation but to my surprise the index of the patient was only half the average of the others. The following are the exact figures: Dr. B., 1.14; Mr. S., 1.05; Mr. C., 0.97; Mr. H., 0.96; Nurse A., 0.95; and Nurse B., 0.92; average 1.00. Patient D., 0.47. The other counts agreed so closely that I felt confident I had made no mistake in carrying out the estimations and I was inclined to suspect that the patient in question had some local tuberculous infection which I had not been able to discover. My late house physician, Mr. C. H. Smith, however, suggested that the low index might be a consequence of the inoculation with antidiphtheritic serum three months

before. One of his colleagues, Mr. W. Yorke, had noticed a marked depression of the tuberculo-opsonic index following the administration of a prophylactic dose of antitetanic serum given to a healthy man who had reason to fear he had exposed himself to the risk of inoculation with tetanus. To test the correctness of this explanation I took the tuberculo-opsonic index of eight other individuals who had been treated with antidiphtheritic serum. In three of the cases a second estimation was made after an interval. The following table shows the opsonic index in each case and the time which had elapsed between administration of the antidiphtheritic serum and the estimation of the index.

No. of case.	Interval since the antidiphtheritic serum was administered.	Index.
1	2 days.	1.30
2	5 "	0.64
	12 "	1.02
	25 "	0.35
3	27 "	0.89
	41 "	0.72
4	25 "	0.64
5	26 "	0.72
6	26 "	0.62
7	27 "	0.77
8	28 "	0.69
9	3 months.	0.47
Average	...	0.73

It thus appears that in all the nine cases examined the tuberculo-opsonic index was found below the normal at some period subsequent to inoculation with antidiphtheritic serum. The depression seems to have increased for some time and in Case 9 to have persisted for months. Cases 1 and 2 suggest that the immediate effect of the inoculation is to raise the tuberculo-opsonic index but the data are too scanty to enable us to generalise on this point. It is obvious that it must be of the utmost importance to bear in mind the possibility of some such cause as was present in the foregoing cases before giving an opinion on the significance of a low opsonic index. As to the nature of the influence of the antitoxic sera, antitetanic as well as antidiphtheritic, on the opsonic index it is premature to offer any positive opinion. It is not unreasonable, however, to assume that it is due to some property inherent in the blood of the horse and has nothing to do with the specific antitoxins.

I have to thank my present house physician, Mr. G. L. Cox, for his assistance in carrying out the estimations.

Liverpool.

EXTENSIVE RUPTURE OF THE LIVER WITHOUT EXTERNAL INJURY.

By F. SEYMOUR LLOYD, M.D. LOND.

AT 9.30 P.M. on May 1st I was called to see a brewer's drayman who had just been brought in by his companions and found him to be dead. As no one witnessed the accident it is impossible to say exactly how it occurred, but it seems probable that as the man was in the act of mounting to the box his horses started off suddenly and trying to pass a dray standing just in front of them squeezed his body between the projecting hoods of the two vans. The first intimation that anything was wrong was received by the driver of the first van who, surprised to find the second van starting before his own, looked down and saw it passing with the deceased hanging by the hands to the stays just below the hood. Immediately the dray forged in front, however, he let go his hold, regained his feet, and darted on to the sidewalk where he leaned against a parapet with his head on his left arm and his right hand compressing his abdomen. He appeared to be in great pain and made as if to vomit, but did not do so; after a little while he tried to pull himself together and said, "All right, mate, I'll drive

them home." These were the only words he was heard to utter. He then, unaided, mounted to his box and drove the horses a distance of about 400 yards when the draymen following with other vans saw his head fall over to the right. They ran and stopped the horses and carefully lifted him down from the box and laid him comfortably inside the dray on a bed of straw. Here he lay groaning and rolling uneasily about. He was last heard to groan when about two and a half miles from Luton, where he arrived half an hour later, when I was called to him. The head and hands were pale and icy cold, the trunk being just warm to the touch. The body and limbs were flaccid throughout. The features were pale but composed and the expression was peaceful. Urine and faeces had been passed into the clothing. Careful examination of the body failed to reveal any bruise, discoloration, or other evidence of injury other than two small scratches, one on the right malar process and the other on the tip of the left ear. There was no sign of bleeding from the nose or mouth, though there were small recent bloodstains on his apron; these possibly came from the scratch on his cheek. The abdomen was much distended and highly tympanitic except for a space of two and a half inches in the flanks, more markedly in the right flank. The man was a magnificent specimen of humanity and measured six feet five inches as he lay on the mortuary table. He had been known for his strength and was extremely popular with his comrades.

In accordance with instructions from the coroner I performed a necropsy on the afternoon of May 3rd, 42 hours after death. The body was rigid throughout and post-mortem staining was marked especially in the neck and shoulders. On opening the parietes the abdominal cavity was found to contain a large quantity of thin dark blood; there were also numerous flocculent clots of small size entangled in the meshes of the omentum and between the coils of the intestines, and in the right hypochondrium were larger clots varying in size from that of a marble to that of a fowl's egg. The liver was retracted well under the ribs and only a small portion of the left lobe was visible at the epigastric angle. It was carefully removed and presented the following appearance. The liver was large in conformity with the splendid development of the subject; it appeared pale, but was perfectly healthy in substance. Through the thickest portion of the right lobe was a tremendous fissure, running backwards through both capsule and glandular substance from the anterior edge to the posterior surface, and being so complete that the liver was all but divided by it into two portions, only a narrow bridge of liver tissue about an inch thick connecting them. The fissure was straight and was eight and a half inches long, the surfaces exposed by it being rough and granular looking. The greatest breadth of the torn surface was roughly four inches, tapering thence to a point towards the anterior edge. About the centre of this fissure was another contused tear three inches long running perpendicularly to it outwards to the right; this, however, only penetrated the liver substance for a depth less than half an inch; one or two smaller tears radiated from the point of junction of the major tears in a stellate manner. The gall-bladder and the rest of the liver were normal, as were all the other abdominal viscera. The intestines were collapsed and the stomach was empty. There was no fracture or injury to any of the ribs or the spine. The lungs were normal but were very retracted and pale. The heart was normal. Death evidently resulted from shock and internal hæmorrhage. The deceased had been a most temperate man.

Remarks.—The case furnished several points of interest.

1. The remarkable length and completeness of the rupture.
2. The fact that there was no concomitant injury to the bones or soft parts. This may be accounted for in three ways: (a) The thickness of the man's clothing, apron, coat, &c., the evenings being chilly. (b) The force was not an instantaneous force delivered by an instrument of small surface area but was presumably a rolling force of large area represented by the surfaces of the board hoods. The effect of one dray moving would be to give a "spin" to the body comparable to the action of a mangle. It would thus be squeezed, the pressure increasing until the moment of closest approach of the drays, and lessening as they drew apart. The capsule of the liver stood this severe strain as long as it could and then, the force still continuing to act, burst open. (c) His muscular development. In this young (he was 28 years of age) muscular man the elasticity of the ribs responded well to the strain.

3. That in a case of such extreme injury the sufferer should be able to walk and to mount his box, no easy feat as I proved for myself. Also that he should be able to drive for 400 yards. 4. The very rapid cooling of the body owing to the abstraction of blood from the extremities. Though he could not have been dead for more than half an hour at the most the trunk was only just warm.

Luton.

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 LIGATURE OF THE COMMON FEMORAL ARTERY AND VEIN; GANGRENE; AMPUTATION; RECOVERY.

(Under the care of Mr. J. HUTCHINSON, jun.)

FOR the notes of the case we are indebted to Dr. H. F. Horne, late house surgeon to the hospital.

A butcher, aged 22 years, was admitted into Cotes ward of the London Hospital on Sept. 1st, 1905, suffering from severe hæmorrhage and collapse. The history of the case was that while engaged in his occupation and dismembering a carcass the double-edged knife he was using slipped and entered the right thigh. On admission he was much collapsed, almost pulseless, the lips were much blanched, and his clothing was saturated with blood. A pad had been applied over the wound and tightly bandaged. No pulsation could be felt in the posterior tibial artery. Ether was administered immediately on admission and a transverse wound was found in the right thigh one inch in length, situated one inch below Poupart's ligament, through which opening blood flowed freely on removing the pad. By digital pressure the iliac artery was compressed against the brim of the pelvis and a longitudinal incision five inches in length was made in the line of the artery and exposed the femoral vessels. The vein and artery were both partially severed and had retracted, a small piece of the vessel wall connecting the upper and lower portions in each case. The upper portions which had retracted under Poupart's ligament Dr. Horne pulled down with Spencer Wells's artery forceps and applied silk ligatures to each by means of an aneurysm needle, the anterior crural nerve being held out of the way. The lower segments of the vessels were similarly dealt with. The wound was partially closed with silkworm-gut sutures and plugged with sterilised gauze. After the vessels had been secured four pints of normal saline solution were injected into the basilic vein of the left arm and the patient was given half a grain of morphine hypodermically on recovering from the anæsthetic, which caused considerable improvement in the pulse. The patient was kept fully under the influence of morphine for the succeeding 48 hours. The leg and foot were thoroughly cleaned and every precaution was taken to keep up the circulation of the limb. With division of both artery and vein it was scarcely to be expected that gangrene could be averted.

The wound was dressed on Sept. 3rd and was found to be quite healthy. Discolouration of the skin had appeared on the foot and extended up the leg to within three inches below the knee. During the following 12 days the wound was continually redressed and gradually closed. The toes and foot gradually became mummified, the gangrene apparently not spreading higher up the leg, and the temperature kept normal. On the 16th the gangrenous area had extended to the upper end of the tibia; the leg was swollen and green, smelling offensively, and one or two small blisters had appeared on it. The pulse was slightly quickened and the temperature had risen to 102.5° F. By the following day the area of gangrene had reached the upper border of the patella. Dr. Horne therefore amputated