

## NEW INFECTIOUS DEPARTMENT AT THE CHILDREN'S HOSPITAL, BIRMINGHAM.

THIS department, recently erected at the rear of the main building of the Children's Hospital, consists of four wards, and a nurse's house, in which accommodation is provided for a sufficient number of nurses in a block entirely isolated from the main hospital; a wash-house and laundry, in which the ward linen, &c., can be cleansed and kept entirely separated from that in use in the main building; and a mortuary, comprising a small reception room and a larger roof-lighted room, the latter being for the purpose of post-mortem examinations. The walls of the mortuary are enamelled bricks, and the floor is asphalted. The wards consist of a reception or quarantine ward, the dimensions of which are—length 20 ft., width 16 ft., height 14 ft., and is intended to contain three cots. A ward for cases of croup and diphtheria 20 ft. long, 20 ft. wide, and 14 ft. high, for four cots. There are two fever wards, each being 40 ft. long, 20 ft. wide, and 14 ft. high, and each holding ten cots.

The wards are built of best red bricks, and the interior walls are covered with Minton's enamelled tiles of different shades of light yellow, square and hexagonal alternating, the patterns being divided by an ornamental brick band.

The ventilation is, by means of a shaft carried above the ceiling, and terminating in a brick flue. A perpetual upward current is occasioned by means of a gas-jet in the ceiling. The fresh air is admitted over the windows by means of perforated iron faciae, and these latter are kept under control by means of a fall, hinged and worked with a cord. In addition there is fresh air admitted through grids in the floor line, passing between the hot-water coil pipes. These pipes, of which there are four sets in each of the fever wards, and two in each of the smaller wards, are protected by an ornamental iron screen, and are covered with marble slabs. In addition to these pipes the wards are provided with an open fire-grate.

The floors are of oak, dowelled together, so that no nails are visible. The remainder of the woodwork is of best selected deal, stained and varnished. All windows, doors, and other mouldings, have been specially designed not to harbour the dust, &c. Each fever ward is provided with a bath-room, w. c., and lavatory, the latter being accommodated with hot and cold water service. The two smaller wards have a w. c. and a lavatory only.

The drainage has received special attention. The water from the roofs is conducted into a large iron tank and used for laundry purposes. The connexion between the tank and the building is cut off by means of a trap. The waste water from baths, closets, and lavatories is conducted by separate pipes into the main sewer; the connexion between the pipes and the sewer is cut off by means of a brick trap, provided with a large ventilating shaft. Flushing tanks have been provided at the highest points of the drains, to allow of periodical flushings. The waterclosets are provided with Pott's traps. The department is in itself very complete, and is a very valuable addition to the charity.

## Correspondence.

"Audi alteram partem."

### THE LOCALISATION OF THE FUNCTIONS OF THE BRAIN APPLIED TO THE USE OF THE TREPHINE.

To the Editor of THE LANCET.

SIR,—In your issue of July 7th last (p. 21) there is an editorial article on the application of the new views on the localisation of the functions of the brain to the use of the trephine. Two cases in which that operation has been successfully performed by M. Terrillon and M. Lucas Championnière, guided by the new views on localisation, have attracted your attention, and you point them out, trusting that this important surgical question may be the subject of patient investigation by our younger surgeons.

There are two distinct points relating to the question of this application of the doctrine of localisation to the use of the trephine, which have not been discussed in your article. The first is whether the indications furnished by that doctrine, supposing it to be true, can really be of service. The second is whether that doctrine is true or not. It is clear that if the new views on localisation are to be rejected there is no need of discussing the first of those two points. As I hope to show that we must reject those views I will only say that in an admirable report on the papers of the above-named surgeons, read by Professor Gosselin,<sup>1</sup> in the name of a committee, to the Académie de Médecine of Paris, he has proved that very little, if any, use can be made of the new physiological doctrine of localisation as regards the application of the trephine to the cranium. Professor Gosselin establishes first that the new views change nothing as to the well-known circumstances which indicate the use or the non-use of the trephine. He then shows that, in cases of fracture with depressed pieces of bone, surgeons, instead of looking for the part of the cranium corresponding with the fissure of Rolando, will always be guided by the site of the wound and that of the fracture under it, to find where to apply the trephine. Thirdly, he examines the case of patients having had a blow on the head without a fracture, but presenting symptoms of loss of action of one of Dr. Ferrier's psycho-motor centres, and asks if then the trephine is to be used. To this question he replies "positively no": first because other parts of the brain than the convolutions can produce those symptoms, and secondly because a cure is possible without an operation; and he adds that, owing to the danger of the operation, there is a better chance of cure if the cranium is left unopened than if it is trephined.

I will leave to surgeons the examination of the various questions so ably discussed by Prof. Gosselin. What I wish to do now is to show that anyone who would be led to apply the trephine to the cranium simply by a supposition that there is a pressure upon a certain convolution, or group of convolutions, because certain symptoms appear, would commit a dangerous blunder. A patient, who was afterwards under my care in New York, had the good fortune to escape without much harm from an operation of that kind, but it would not be so always. Before coming to me that patient had been treated by a distinguished New York physician, who, led by the view that the third left frontal convolution is the seat of the faculty of expressing ideas by speech, had the notion that a cure for aphasia and epilepsy with some right hemiplegia (symptoms existing in that patient) might be obtained by trephining at the level of that convolution. An eminent surgeon consented to perform the operation. The dura mater was found healthy, and the two medical men, not pushing their boldness further, did not divide it. The patient fortunately recovered without any persistent bad effect from the dangerous traumatic injury inflicted upon her.

Not to give an undue development to this letter, I will content myself with some statements of facts bearing on the question of the existence of the so-called psycho-motor centres in the cortical substance of the brain. As we know that in a case of fracture of the cranium a lesion can be produced in any deep-seated part of the brain, as well as in the convolutions, and that if it occurs in the cortical substance of the brain it may as well be in a convolution far away from the seat of the fracture as in the one just under that seat, I am clearly entitled to make use of cases of disease in any part whatever of the brain to show that the paralytic or convulsive symptoms that may appear after a fracture of the skull, or a blow on the head, are not appropriate indications to lead to an application of the trephine in one place rather than in another.

The first argument I will employ is that *convulsions or paralysis may appear whether the lesion is in the special zone of the cortex cerebri, which is supposed to contain motor centres, or outside of that zone.* I add that these morbid manifestations can appear as well from lesions in parts of the brain not belonging to the radiations uniting the supposed motor convolutions with the corpora striata and the crura cerebri. In my lectures on Paralysis, already published in THE LANCET, I have shown by a great many facts that a lesion located in the posterior or the sphenoidal lobes, or in the

<sup>1</sup> Bulletin de l'Académie de Médecine, No. 14, séance du 3 Avril, 1877, p. 370 et seq.

anterior or middle lobes outside of the supposed voluntary motor apparatus, and also a lesion in the optic thalamus, in the cerebellum, &c., even where no pressure can be exerted on other parts of the brain by the diseased tissues, can produce paralysis, and not rarely even a complete and persistent one. So it is with convulsions, which we find to be caused just as well by disease of supposed non-motor as by lesions of the supposed exclusively motor parts of the brain.

The second argument I will use is the counterpart of the preceding; it is that *all sorts of morbid alterations, irritative or destructive, occupying the whole or a part of the cortical motor zone or any other part of the encephalic voluntary motor apparatus, may exist without producing either paralysis or convulsions.* In my third lecture on Paralysis, which will soon appear in THE LANCET, I will give a great many facts showing that paralysis may not be produced even in cases of extensive disease of either of the three lobes, or of the ganglions, or of the base of the brain. I will only now, without giving details, state that there are on record cases of destruction or great alteration of the so-called psychomotor centres on one or on both sides without any marked paralysis. Indeed, there are most important cases of considerable alteration of the cortical substance, not only of that of those parts of the anterior and middle lobes considered as containing the motor centres, but also of that of almost all the other parts of the two cerebral hemispheres, without any evident paralysis. Such are cases published by Gama, Lenormand, Billard, Lécorché, Chambert, Abercrombie, Dr. Elam, Brière, R. Bright, Belhomme, Simms, &c. To these cases of disease of almost all the convolutions on both sides of the brain I might add cases in which a considerable pressure was exerted on the surface of a great part of the two cerebral hemispheres, or of local alteration in a great many parts of the convolutions, without any marked paralysis. Such are cases given by the following observers, some of whom believe in localisation: Sir William Gull, Professor P. Broca, Huguenin, Marcé and Luys, Rogerson, Dugast, Gintrac, &c. As regards convulsions, there were none in most of these cases, so that it is clear that a considerable alteration of the pretended psychomotor centres may exist without any marked paralysis or convulsions.

*A considerable alteration, and in a great measure a destruction, of tissue, with more or less extensive irritation of surrounding parts, may exist in two lobes, or in almost the whole of one hemisphere, without any marked paralysis or convulsions.* Cases showing this are more numerous than anyone who has not specially examined the subject may be ready to admit. I shall soon publish some details of a number of those facts. I will simply now name the following authors who have put them on record. As regards cases of disease of a great part of one hemisphere without paralysis, I will name the following observers, some of whom are very distinguished men:—Dr. H. Day, Abercrombie, Porta, Dr. R. Quain, Thibaut, Pasquet, De Fleury, Dr. J. W. Ogle, Anger, Alègre, W. Roberts, Porral, Alex. Thomson, Pédelaborde, Prof. Richet, Spessa, Prévost and Cotard, Boudet, Lagrange, Mr. Callender, Robert, &c. In most of those cases no convulsions took place. I could lengthen this list considerably, especially if I added to it the names of authors having published cases in which there was but an incomplete paralysis not withstanding an extensive atrophy of one hemisphere.

I will merely say also, that *disease of the two anterior or the two middle lobes, of the two corpora striata, of the pons Varolii or the medulla oblongata, as also disease of one of the crura cerebri, can exist without marked paralysis or convulsions.* I will only name now some of the authors who have published cases of alteration of the two anterior or the two middle lobes, or the two corpora striata, without marked paralysis. In some only of those cases convulsions have been noticed. I will first give a list of authors of cases of disease of the anterior lobes: Mr. Prescott Hewett, Velpeau, Dr. Banks, Berger, Berghmann, Campana, Gama, Dr. Jamison, Sir G. Burrows, W. Roberts, Dr. A. Leith Adams, Bosc, Cordier, Marcot, Breschet, De Castelnau, J. H. Drawbridge, Trousseau, Avonde, Blaquière, and Baraduc.<sup>2</sup>

<sup>2</sup> No doubt in a number of these cases of disease of the two anterior limbs the ascending frontal convolution may have escaped; but there is no doubt also that the disease, in some cases at least, extended to, and even went beyond, the fissure of Rolando, so that a good part of the pretended motor zone was injured or destroyed.

The following is a list of authors who have recorded cases of disease of great parts of the two middle lobes or of both corpora striata, without any marked paralysis, and generally without convulsions: Broussais, Collin, Carron, Siredey, Lallemand, Fabre de Puch, Lesserré, Mr. Jonathan Hutchinson, Troisier, Abercrombie, Durand-Fardel, Andral, Dr. J. H. Bennett, Gintrac, Dr. J. W. Ogle, Aran, Dubruel, Müller, and others.

The third argument is, that *local paralysis or convulsion (face, arm, or leg alone) may appear, whether the lesion is in some part of the voluntary motor apparatus or outside of it.* Indeed, the number of cases in which there has been local paralysis of either the face or the arm from disease of parts outside of that apparatus is greater than the number of cases of these two kinds of local paralysis caused by a lesion of the so-called psycho-motor centres. The same thing, as regards the arm and the leg, is true also for convulsions. I may go farther, and say it is a question whether local or general convulsions in cases of disease of the cerebral convolutions do not always depend, in a great measure at least, on the irritation of the meninges.

The fourth argument is, that *paralysis or convulsions of the arm alone or chiefly, in cases of disease of the convolutions, may appear when the lesion occupies the seat of the pretended psychomotor centre for the leg.* There are many cases showing this.

The fifth and last argument is, that *unilateral paralysis or convulsions may appear on the side of the lesion in the brain.* This I have fully shown as regards paralysis.<sup>3</sup> I will merely say now that unilateral convulsions on the side of the lesion are extremely frequent. If, when the lesion is in the left half of the brain, cross convulsions exist in most cases, we find, on the contrary, that the number of cases of *direct* convulsions is much larger than the number of cross convulsions when the lesion is in the right side of the brain. Out of 322 cases of unilateral convulsions from brain disease that I have collected, there are 184 allied with lesions in the right hemisphere, and 138 with lesions in the left. Of the 184 there are 110 cases in which the convulsions occurred in one or in both limbs on the right side, and 84 in which they took place on the left side; so that it is clear that unilateral convulsions appear much more frequently on the side of the lesion than on the opposite side when the right side of the brain is the seat of the lesion. Not so when the left half is diseased; as, out of 138 cases, the left limbs were convulsed only in 31 cases, and the right limbs in 107 cases.

I might bring forward many other decisive arguments against the views that paralysis and convulsions may show where there is disease in the convolutions of the brain or in the radiation from these superficial parts towards the crura cerebri, but I trust that what I have said is quite sufficient. I hope that no surgeon will venture to open the cranium, and make a patient run the risk of a traumatic meningitis or septicæmia, on the mere suspicion that if he is attacked with paralysis or convulsions localised in the arm or the leg, or the face alone, after a blow on the head, it is that some lesion exists along the fissure of Rolando or its neighbourhood. I hope also that the place of application of the trephine, when it is found necessary to make use of that surgical means in a case of fracture of the skull, will be selected according to the classical rules for such an operation in such cases, and not on the more than doubtful significance of symptoms that may depend on disease located not only very far from the place where it may be supposed to exist, but on the other side of the brain than that of the fracture.

Believe me, Sir, yours truly,

C. E. BROWN-SÉQUARD.

Lewes-crescent, Brighton, July 14th, 1877.

## THE UNIVERSITY OF LONDON AND MEDICAL WOMEN.

To the Editor of THE LANCET.

SIR,—As the first paragraph of your leader of Saturday last seems to have been written under a grave misapprehension of the intentions of the Senate in regard to the conditions under which they have resolved to admit women to degrees in medicine, I must request your permission to be allowed to give a correct statement of the case.

The Senate, in adopting the report to which you refer,

<sup>3</sup> See THE LANCET of January, 1876, and of April and May, 1877.