ing. The arachnoid was raised at this place by clear fluid which filled the gap, and gelatinous-looking bands ran across the fluid between the arachnoid and the pia mater. The brain and its membranes otherwise seemed to be free from disease.

The state of the parts is shown in the illustration, from which it will be seen that the only part of the third left frontal convolution which remained was a thin shred at the extreme posterior end; and that the island of Reil also was to a large extent excavated. The ascending frontal convolution was intact.

A. Part of the island of Reil. B. Shred of posterior end of the third left frontal convolution. The membranes were stripped off the surface of the brain while fresh; the brain was then hardened in ten per cent. solution of nitric acid; and the sketch has been made by Mr. Nisbet from the hardened brain with the aid of a photograph.

Following up the former history of the patient, I was able to ascertain from the friends that at the age of twenty years he fell from a scaffold at Hamilton Palace, sustaining a scalp-wound over the left brow. From this injury he made a rapid recovery. Then there is a history of a fit at the age of twenty-eight years, after which he seems to have led a quiet uneventful life. He was of studious habits, and disinclined to mix much in society, although he was not morose; and he developed a custom of solitary tipping of raw whiskey without any noticeable excess. About three years and a half before death, he had a fit lasting three hours, during which he was flushed and snoring; and when he came to, he was observed to speak rationally, though with a confused sense of bewilderment. Six months later, another fit of a trifling character was noted; and six months later, again, a slight fit. To those about him it seemed that, after the first of these three attacks, he did not lose the power of speech at all, but that his memory was impaired. He was forgetful; he would put down a tool in the workshop, and then wander about looking for it; or place his pay on the window-sill of the office and absently walk away leaving it behind him; or at the baths he would put on his clean shirt over his dirty one and fancy that he had lost the dirty one, etc.

Such a history as this may justly be regarded as incomplete; but from it we may at least conclude that aphasia was not at any time a feature in the case. The case, therefore, has a certain bearing on the disputed question of the localisation of function in the brain. I will only add that the patient was right-handed, and that there was never any hemiplegia.

The various theories of the localisation of speech have been fully discussed by Dr. Dodds in the *Journal of Anatomy and Physiology*, vol. xii. Dr. Dodds reduces them to three. Of these, the narrowest is that of Broca, who places the centre of language "always and only in the posterior part of the third left frontal convolution"; and, *à propos* of this, Dr. Dodds remarks that "a single complete case of lesion of the posterior part of the third left frontal without aphasia would effectually overthrow Broca's attempt at exclusive localisation". Several cases are on record in which lesion of the third left frontal existed without aphasia; but to these there are certain minor objections. The case of Batty Tuke appeared at first to overthrow Broca's views; but it was afterwards ascertained that in the course of that case there had been a period of distinct aphasia. This lends an additional importance to the case which I have detailed above; for in it there is no evidence of aphasia at any time, while the destruction of the third left frontal convolution was so complete as to abolish any function which it may have exercised. It cannot be believed that the thin hollow fragment at the junction of the third left frontal with the ascending frontal could have sufficed to maintain the function of the convolution. I hold, therefore, that the view of Broca is rendered untenable by this case.

The views of Dax, who localises speech "in the left hemisphere only", and of Bouillaud, who includes both anterior lobes in a general sort of way, can scarcely be called exact efforts at localisation. Dr. Dodds, therefore, proceeds to build up a theory of localisation which shall embrace all the known facts. Like Ferrier, he is inclined to place the speech-centre rather further back, so as to include the lower part of the ascending frontal, together with the island of Reil and the back part of the third frontal convolution; but, in accordance with the recorded observations of lesions of these parts on the right side accompanied by aphasia, he advances the theory of bilateral localisation of the speech-centre. There are thus two centres, right and left, one of which is the active or predominating one; the left side, as a rule, taking the leading part. It may be that the loss of function depends on the suddenness of the occurrence of the lesion; or it may be that function is lost only when the leading centre is attacked, the subordinate centre being unable to act alone. There would thus be a class of cases in which the subordinate centre is attacked, and speech is but little or not at all affected, because the leading centre continues in full vigour. Of these cases, that which I have detailed would seem to be one. In it, the course of events leading to the destruction of the third left frontal convolution began probably at the fit three years and a half before death; and it is most likely that embolism of the branch of the middle cerebral artery supplying the diseased area took place at that time. If so, the left centre may have been the subordinate one, and thus the preservation of speech immediately after the fit is explained.

In the Gulstonian Lectures for 1878, Dr. Ferrier gives the localisation of speech in the lower part of the ascending frontal and adjacent parts of the third frontal and ascending parietal convolutions on the left side. This region is scarcely invaded by the lesion which I have figured, and his theory, therefore, stands unaffected by the case. I am inclined to attach the more weight to the theory of Dr. Dodds, because it is difficult to understand why there should be a part of the brain on the right side corresponding in shape and structure to that described as the speech-centre on the left side, and yet totally quiescent as to function; for it has never been attempted to attach any other function to the right speech-area, while it is admitted by eminent observers that the speech-centre is in rare cases on the right side, and that the right centre may in certain cases be educated to supply the place of the left one. It seems to me to be much more consonant with physiological facts as to nutrition in relation to function, to suppose that the right centre is always taking a share, though usually a subordinate one, in the function of speech.

THE ETIOLOGY OF ENTERIC FEVER, WITH AN ACCOUNT OF NINETEEN CASES WHICH OCCURRED IN THE HOMERTON FEVER HOSPITAL.

By ALEXANDER COLLIE, M.D.,
Medical Officer of the Hospital.

II.

THE Homerton Fever Hospital was opened in February 1871. It was used for the reception of small-pox patients from this date till July of the same year, when it was closed for the purpose of being disinfected and painted. On October 1st, 1871, it was reopened, and from this date till December 8th, 1876, it was used for the reception of fever-patients. From December 8th, 1876, till May 1877, it was again used for the treatment of small-pox. It remained closed for the admission of patients from May 1877 till September 27th, 1877, when it was reopened for the reception of fever-patients, and from that date till the present has continued to receive such patients.

During the time the hospital has been used for the reception of small-pox patients, one case of enteric fever has arisen among the staff; but during the time it has been used for the treatment of fever-patients, twenty members of the staff have been attacked with enteric fever, four of whom died. In the *JOURNAL* of the 30th of November last, I have given the history of the latest two of these; of the previous nineteen the following are the histories.

1. J. Brown, aged 18, entered the service on November 1st, 1871, as a ward-servant. She was on duty in an enteric ward from November 1st till December 6th, 1871, when she was ward with an attack of enteric fever.

2. M. Mison, aged 22, entered the service as a ward-servant on February 23rd, 1871. There is no record as to what ward she was on duty in previously to November 13th, 1871, when she was promoted to be an assistant-nurse, and placed on duty in an enteric ward, where she continued to do duty till December 10th, 1871, on which date she was ward with an attack of enteric fever.

3. A. Beene, aged 26, entered the service as an assistant-nurse on February 28th, 1871. There is no record as to what ward she was on duty in previous to October 22nd; from this date till April 29th, 1872, she was on duty in an enteric ward. She was warded with enteric fever on April 29th, 1872.

4. M. A. Day, aged 26, entered the service as a nurse on January 26th, 1871. On duty in an enteric fever ward from October 1st, 1871, till October 25th, 1872, when she was warded with an attack of enteric fever. This nurse said she had enteric fever previously in the London Fever Hospital.

5. E. Warner, aged 23, entered the service as an assistant-nurse on December 12th, 1871. There is no record as to ward in which on duty previous to April 1872; from this date till November 6th, 1872, when she was warded with enteric fever, she was on duty in an enteric ward. (Died.)

6. J. Hannaford, aged 21, entered the service as a nurse on August 11th, 1873. On duty in an enteric ward from this date till September 17th, 1873, when she was warded with enteric fever. (Died.)

7. S. Woodrow, aged 24, entered the service as an assistant-nurse on September 27th, 1873. From this date till October 6th, 1873, on duty in an enteric ward. On this date, she complained of being ill, and it was considered advisable to ward her. No very definite symptoms ensued, and she was discharged from the ward on October 18th, and resumed her duties in an enteric ward, where she did duty till October 24th, 1873, on which date she was warded with enteric fever.

8. M. J. Thomas, aged 24, entered the service as an assistant-nurse on May 27th, 1873. On November 5th, 1873, she was warded with an attack of enteric fever. This nurse had been on duty in an enteric ward for at least one month continuously before the date of her attack, but the exact time is uncertain.

9. C. Purver, aged 18, entered the service as a ward-servant on November 10th, 1873. She was on duty in an enteric ward from this date till December 4th, 1873, when she was warded with enteric fever.

10. E. Tingey, aged 22, entered the service as an assistant-nurse on October 22nd, 1873. She was on duty in an enteric ward from this date till December 10th, 1873, when she was warded with enteric fever.

11. C. Manhardt, aged 25, entered the service as an assistant-nurse on August 15th, 1873. From August 15th till October 15th, there is no record as to duties. From October 6th to 10th, she was on duty in a typhus ward. She was on duty in enteric wards from October 18th till December 2nd, 1873; after this, she was unable to do duty, and was warded on December 8th with enteric fever.

12. R. Tingey, aged 23, sister to No. 10, entered the service as an assistant-nurse on October 24th, 1874. She was on duty in an enteric ward from October 5th to 28th, in a scarlet fever ward from October 29th to November 1st, in an enteric ward on November 2nd, in a scarlet fever ward from November 3rd to 23rd, and in an enteric fever ward from November 24th to 27th. She was warded with enteric fever on December 2nd, 1874.

13. E. Graney, aged 19, was admitted as a patient on October 20th, 1874. She was found to be suffering from a continued fever of obscure origin, and was placed in an enteric ward. On her recovery, she was anxious to be engaged as an assistant-nurse; and she was engaged on probation to perform the duties of assistant-nurse for about six weeks prior to February 25th, 1875, when she was sent to bed with a well-marked attack of enteric fever.

14. M. Capron, aged 30, entered the service on August 16th, 1874, as a laundress. She was on duty in the laundry up till March 1875, when she was warded with an attack of enteric fever. (Died.)

15. F. Weaver, aged 24, entered the service as an assistant-nurse on August 4th, 1874; she was promoted to be nurse in October 1875; was on duty in scarlet fever wards from date of entering service till February 8th, 1876; and on duty in enteric ward from February 9th, 1876, till March 16th, 1876. On the following day, she was sent to the ward with an attack of enteric fever.

16. R. Bentick, aged 21, entered the service as a ward-servant on October 18th, 1875. She was on duty in enteric and scarlet fever wards until July 1st, 1876. From this date till October 5th, 1876, she was on duty in the laundry (officers'); and was warded with enteric fever on October 6th.

17. M. A. Procter, aged 24, entered the service as a nurse on November 4th, 1876. She was on duty in isolation and scarlet fever wards from November 8th till December 14th; on duty in small-pox wards from this date till May 5th, 1877; on duty in isolation ward from May 5th till June 5th, 1877. She was warded on June 6th with an attack of enteric fever.

18. E. Honey entered the service as a ward-servant on January 12th, 1874; she was promoted to be an assistant-nurse in May 1874, and was on duty in enteric wards from May till the end of July of the same year;

and on duty in scarlet fever wards from August 1874 till December 1876. She was promoted to be a nurse in February 1875; was on duty in small-pox ward from December 14th, 1876, till May 1877; and on October 5th of same year, was sent as a patient to an enteric ward with indefinite symptoms. Between the 10th and the 27th of this month, having recovered from her ill-defined symptoms, she assisted in the nursing work of the ward, from which she was discharged on the 28th, upon the evening of which day she was readmitted with symptoms of enteric fever.

19. G. King, aged 24, entered the service as an assistant-nurse on October 22nd, 1874. She was promoted to be a nurse in November 1875; was on duty in enteric wards from October 25th, 1874, till January 24th, 1875; from this date till December 14th, 1876, on duty in typhus and scarlet fever wards; on duty in small-pox wards from December 14th, 1876, till May 1877; on duty in an enteric ward from September 28th, 1877, till October 31st; and in scarlet fever ward from November 1st to 4th. She was warded with enteric fever on November 5th.

These cases may be separated into two groups; first, those persons who were not on duty in enteric wards at the time of contracting enteric fever; and, second, those persons who were on duty in enteric wards at the time of, and for some time before, contracting enteric fever. To the first group belong three; and to the second, sixteen.

It will be convenient, first of all, to consider the origin of the disease in the cases belonging to the first group. It will be observed that two of these, Nos. 14 and 16, were persons engaged in laundry work; and one, No. 17, was a nurse. First with regard to No. 14; this person had been engaged in the laundry for ten months before contracting enteric fever. It was her duty to wash the soiled linen. In the month of March 1875, it is stated that, contrary to the usual practice, a quantity of linen soiled with enteric stools had been left steeping for some days in a tank; and, on removing it, the laundress complained that a very strong stink arose from it. In the course of twelve days thereafter, this person fell ill of enteric fever, of which she died. As far as is known, the laundry and dormitory drains were in good order at the time when this case arose. On the supposition that the statement concerning the soiled linen be correct, the illness may have arisen from that. Of the origin of case No. 16 (Bentick), we have no satisfactory explanation to offer. As she was wholly employed in the officers' laundry, she would not be exposed to enteric poison, or to decomposing stools, unless she did gratuitous duty. Did she catch it from frequenting enteric wards? Then with regard to the origin of case No. 17; this is the only instance of a nurse not on duty in a ward with acute enteric patients contracting the disease. The date of her attack was May 30th, 1877. The hospital, which had been open for the reception of small-pox patients during the winter, was closed in May; but certain cases which were considered unfit for removal at that time, were treated in the isolation wards. This nurse was on night-duty in one of these wards. There were no acute cases of enteric fever among the patients in her ward at the time of her seizure; but several cases of enteric fever had been sent to the hospital in the months of January, February, March, and April, and these had been treated in this ward. The date of the last enteric case admitted was April 10th. She stated that, at times, there was a strong stink of sewer-air in the ward arising from the drain of the bath-room and water-closet; and her attack may have been due to this, although it is by no means certain that this is the explanation; for it may be asked—If this were so, how did the patients in the ward escape? However, this was the only evident cause.

Before proceeding to consider the origin of the cases arising among the staff on duty in the enteric wards, it will be advisable to describe shortly the plan of the hospital, the drainage system, and the water-supply.

The building consists of four parallel pavilions, and one single pavilion, two storeys high, which are connected by, and project at right angles to, a corridor running east and west. The officers' quarters, kitchen, laundry, etc., are connected with this corridor by another running right through the centre and at right angles to the ward-corridor. At one extremity of this (the north) is the laundry; at the other (the south) are the officers' and servants' blocks and kitchen. The building is, therefore, in the form of a cross, the pavilions being east and west as to their sides.

Adjoining the ward is a bath-room, containing a water-closet, a sluice-pan, and a sink, and a fixed washhand-basin with a pipe which goes straight into the main pavilion drain. The pipes leading from the water-closet and sluice-pan are three inches in diameter, are each trapped with an "S" bend holding four inches of water, and pass into the main pavilion drain, after being joined by the sink-pipe, which is trapped by an "S" bend and a fixed bell-trap. The pipe from the bath-sink, which is trapped by a fixed bell-trap, passes straight into the main pavilion drain. The soil-pipe is ventilated by a one-inch pipe

opening in the outer air close to the roof; and the main pavilion drain is separated from the main drain by an "S" bend holding four inches of water. Attached to each ward is a patients' day-room, off which is a water-closet and a fixed washhand-basin, the arrangements of which are the same as those just described. In the main corridor, there are four water-closets, for the use of the nurses and servants. The drains of these are trapped in the same manner as the water-closet drain of the wards, but not ventilated. The scullery-pipe, trapped with an "S" bend, passes into the main drain.

In the nurses' dormitories, the water-closet drains are constructed and ventilated as in the wards. In the superior officers' quarters, and in the front administrative block, the water-closet drains are constructed as in the wards, but they are not ventilated.

The water-supply is continuous. In the officers' and servants' quarters, separate cisterns are provided for drinking and for water-closets. In the wards, one cistern serves both purposes.

[To be continued.]

CASE OF DWARFED GROWTH, ASSOCIATED WITH IDIOCY AND CONGENITAL TONIC CONTRACTION OF THE MUSCLES OF THE SPINE AND LIMBS.

By H. G. RAWDON, M.D.,
Surgeon to the Liverpool Infirmary for Children.

THE subject of the peculiar morbid condition to be described is a boy aged $5\frac{1}{2}$ years, admitted into the Liverpool Infirmary for Children on October 15th, 1878. He weighs $10\frac{1}{2}$ lbs., and his height is between 28 and 29 inches, as far as can be determined by measurement. His intelligence is obviously very limited, but not absolutely wanting. He utters no articulate sound. His eyes are large and apparently well developed, yet he is undoubtedly blind. He evidently possesses the sense of hearing. He has all the first teeth, but makes no attempt to masticate his food. The forehead does not recede; and the head is proportionate to the size of the body; in circumference, it measures (over the occipital protuberance and above the eyebrows) 16 inches. He cannot sit up, the back (below the neck) being rigid and arched in the lumbar region from tonic contraction of the spinal muscles, producing a condition resembling opisthotonos. The upper extremities are in a state of rigidity, the shoulder and elbow-joints being fixed; the latter flexed nearly at a right angle. The thumbs are flexed; and the fingers are firmly buried in the palm, and can only be extended with difficulty. The joints of the lower extremities are also fixed, the hips and knees being flexed almost at right angles. The toes are flexed. The limbs on each side of the body are equally affected. The extreme rigidity of the muscles and tendons in connection with the several joints suggests ankylosis; but each joint is capable of a slight degree of motion when a little force is applied. The limbs have a wasted and shrivelled appearance; but the face is not thin; in fact, the child has evidently been well cared for. There is no tendency to rickets. The facial and cervical muscles are entirely unaffected. The sphincters also act naturally. The cardiac sounds are normal, and the circulatory system appears free from defect. He occasionally utters a sound, like an infant several months old. He is by no means a fretful child, but now and then cries lustily. He appreciates being caressed and patted, and, if fretful, he can thus at once be quieted. He also immediately takes notice when called by his name, "Tommy". Occasionally he gives a hearty laugh, quite a natural one for a child.

The child was affected as described from his birth. He was a twin, but only one-third of the size of his fellow-twin, who was an average-sized infant. He cut his teeth naturally at the usual periods. He has had no convulsions or disease of any kind since his birth. He was suckled. The father and mother are healthy, and live in the country; and their children, before and subsequently to the birth of this one, were healthy and well developed.

I have thought the foregoing case might be not without interest to the profession. It certainly seems a curious fact, that I should not have been able to discover any report or notice of a case at all similar to this one; and yet I cannot doubt that such cases have from time to time occurred. The case may, perhaps, be regarded as one of intra-uterine blight; but why or when taking place we can have no means of judging.

THE new hospital at Ménilmontant and the Hôpital Temporaire in Paris are henceforth to be known by the names of the Hôpital Tenon and the Hôpital Laënnec.

CLINICAL MEMORANDA.

HERPES AFFECTING THE INSIDE OF CHEEK AND TONSIL.

IN reference to Dr. Mackenzie's interesting note in the JOURNAL (March 1st), I beg to say that I have seen several examples of the variety of herpes he has described. The inner side of the cheek, gum, and tonsil have been unilaterally affected; but in no instance has herpes zona been present. There was much neuralgic pain, with loosening of teeth, and even sloughing of the vesicles. A short time ago, a little child had a severe attack on the right tonsil, and the mucous membrane of the right half of the roof of the mouth and right gum, with right labial herpes. Her mother had at the same time labial herpes. A lad (aged 12) had herpes of the skin over the lower jaw, severe lancinating pains in the skin of the same side over the upper jaw, and acute tonsillitis, also on the same side. We have had an epidemic of so-called "spreading quinsy" lately, and there can be no doubt, I think, that this disease is a specific herpes of the tonsils; and I have seen scarcely a case without either nasal or ocular or labial herpes, and several were also attended by auricular herpes. Herpes is a very remarkable disease, of very obscure pathology, and well worthy of careful investigation. Its almost constant association, in the labial form, with pneumonia is very suggestive. Believing, as I do, that pneumonia in a large number of instances is a zymotic disease, this little vesicular phenomenon rises to great importance. An additional curious fact may be of interest. Two years ago, I had three patients, close together, at the same time: one with herpes zona, another with herpes brachialis, and a third with herpes frontalis. I hope to make a longer communication, at some future time, on the whole subject.

THOMAS COLE, M.D., Bath.

THE interesting case of herpes zoster affecting the inside of the cheek and tonsil, reported by Dr. Ingleby-Mackenzie in the JOURNAL of March 1st, though doubtless a very rare form of the disease, is not unique. On referring to Trousseau's *Clinical Medicine*, vol. v, lecture xvii (Sydenham Society's translation), a full account of the disease, as it appears when the inside of the mouth is affected, will be found. It was first described by Bretonneau and Gubler in the *Union Médicale* for 1858. Trousseau considers that many causes of sore-throat, with exudation, are due to herpes attacking the tonsil and soft palate, and (page 440) gives the following description of the appearances met with: "We see on the tonsils a more or less confluent eruption of red spots, which soon become excoriated. These superficial ulcerations are covered almost immediately with a greyish-white plastic exudation, which, spreading beyond the limits of the ulceration, may become united to ulcerations originating in other herpetic vesicles, so as to form more or less extensive membranous patches." Further on, he relates two cases of herpes of the tonsil, in which the eruption appeared at the same time on the cheek and pharynx.

I think this view of the origin of many cases of sore-throat, with exudation, is not generally held in this country, as it is barely mentioned in our text-books of medicine.

J. K. FOWLER, Addenbrooke's Hospital, Cambridge.

SURGICAL MEMORANDA.

LUMBAR COLOTOMY AT SEVENTY-TWO YEARS OF AGE.

THE capability of lumbar colotomy, both to ward off impending death and to relieve suffering in a variety of shapes, even when a fatal issue is not immediate, is not fully recognised by the profession. One of my most recent cases will help to show with what little risk to life this operation can be performed, even at an advanced age, and also how existence may be made tolerable afterwards. In August 1878, I performed colotomy in the left loin of a male aged 72, a patient of Mr. Rust of Wethersfield. For some two years, the patient had complained of slowly increasing discomfort in the lower bowel, with gradually and at length distressingly frequent desire to defecate. There was also occasional incontinence of feces. During a few weeks, while the patient was twice seen by me, a malignant growth in the rectum, high up and situated anteriorly, progressed rapidly in all directions, and threatened to protrude at the anus. To put a stop to defecation (itself, when frequent, exhausting); to delay the progress of the growth; to prevent incontinence of feces; and, indeed, to put the rectum in absolute repose, colotomy was performed.

Under the careful treatment of Mr. Rust, our best wishes were realised. After the first twenty-four hours, the patient never uttered a complaint.