5—6, 3rd, *vis. P. int. ep.*” would signify that the apex-beat could be seen in the fifth interspace, three inches from the left margin of the sternum; that there was palpitation; that the action of the heart was intermittent; and that the impulse was also visible at the epigastrium.

Dulness.—As a general rule, it is sufficient to note the extent of cardiac dulness in the two directions, vertical and transverse. The first is ascertained by percussing from above downwards at the distance of one inch from the left margin of the sternum—*i. e.*, along the parasternal line; and the rib or interspace at which the dulness commences is to be noted after the letter *V*. The transverse dulness is found by percussing on the line of the fourth rib, and it is requisite to note both the point at which it commences and how far it extends to the left of that point. The notation given for the impulse comes here again into play; but, for the sake of additional clearness and brevity, it may occasionally be advisable to use Roman numerals to indicate the extent of the dulness. Example: Dulness $\frac{V. 4}{T. 5. l. iii.}$. This would mean that the cardiac dulness in the parasternal line began at the fourth rib; and that on the line of the fourth rib, *i. e.*, transversely, it began at the left margin of the sternum, and extended three inches to the left from that point.

$\frac{V. 4-5}{T. \frac{1}{2} r. iii \frac{1}{2}}$ would indicate, in like manner, that the vertical dulness commenced at the fourth interspace; and the transverse at half an inch to the right of the sternum, whence it extended three inches and a half towards the left.

Sounds.—These may be *n.* (normal); *f.* (weak); *v. f.* (very weak); *r.* (rough); *red.* (reduplicate); *ac.* (accentuated), etc. Example: Sounds $\frac{1. v. f.}{2. ac.}$ would mean that the first sound was very weak, and the second accentuated.

Bruits.—After this heading, the most useful abbreviations are *S.* (systolic); *D.* (diastolic); *P.* (presystolic); *A.* (apex); *B.* (base). Consequently, the notation *Bruits S.* and *D. B.* would signify that a murmur was audible at the base both with the systole and the diastole; and the absence of any other notation would indicate that these were the only abnormal sounds.

Respirations.—After recording the number of respirations per minute, the abbreviations *th.* (thoracic) and *ab.* (abdominal) are useful to denote their characters.

Dyspnoea.—*Cough.*—Each of these may be indicated on a scale of intensity varying from 1 to 5.

Sputum.—The abbreviations most commonly required are *ac.* (aërated or frothy), *bl.* (blood), *br.* (brown), *b. s.* (blood-streaked), *g.* (gelatinous), *gn.* (green), *gr.* (grey), *m.* (mucous), *m.-p.* (muco-purulent), *p.-j.* (prune-juice-like), *rus.* (rusty), *y.* (yellow). The quantity should always be recorded by definite measures, such as one drachm, one ounce, twenty ounces, etc.

[N.B.—After each of the succeeding headings of the respiratory system, the part affected must be specified by the proper numeral.]

Expansion.—This may be *n.* = normal; *-*, = diminished; *o.* = none. Thus, *- 1 r.* signifies deficient expansion at the right apex. If it be necessary to record the results of measurement, these may also be noted. Thus, *r. 2", l. o.* would mean that the right chest expanded two inches, the left chest not at all. But, in a case of asthma or emphysema, I should use the abbreviation *con* = contraction in addition; in which case the heading $\frac{\text{Expansion} +}{\text{Contraction} -}$ or $\frac{++}{--}$ would indicate with sufficient clearness that the inspiratory act was carried to a high or to an extreme degree, and that the expiratory movement was defective or extremely defective.

Percussion-Note.—The abbreviations required are *n.* (normal); *d.* (dull); *am.* (amphoric); *ty.* (tympanitic); and *c.-p.* (cracked-pot).

Breathing.—Here the chief abbreviations are *n.* (normal); *f.* (weak); *o.* (absent or extinct); *pu.* (puerile); *h.* (harsh); *lg.* (coarse); *j.* (jerk-ing, interrupted); *am.* (amphoric).

Prolonged Expiration.—After this heading, it is only requisite to indicate the part by the appropriate numeral; and here I may remark that, when the common numerals are not required to indicate quantity in the respiratory system, they may be used to denote the regions or spaces with greater convenience than the Roman numerals.

Dry Râles.—The only abbreviations required are *S.* (sibilus); *Rh.* (rhonchus); *Cl.* (clicking); and *Fr.* (friction-sound).

Moist Râles.—These may be *sm.* or *cr.* (fine, small, or crepitating), denoting the fine crepitation of commencing pneumonia; *s.c.* (subcrepitan), *i. e.*, larger but still small râles, as in capillary bronchitis; *lg.* (large or coarse); and *g.* (gurgling or cavernous).

Vocal Resonance.—This may be *+* = increased; *-* = decreased; *n.* = normal; *o.* = absent; *br.* = bronchial (bronchophony); *p.* = pectoriloquy; *am.* = amphoric; *æ.* = ægophony. Thus, the notation “Vocal Resonance, 1, *r.* +; 9, *l. æ.*” would signify that it was increased

at the right apex, and that there was ægophony at the left base posteriorly.

Temperature.—After this heading, it is useful to record, not only the reading of the thermometer, but also the hour at which the temperature was taken.

Such is a brief outline of the system of case-taking by notation; but it must not be supposed that I advocate it to the entire exclusion of the ordinary method. Under any circumstances, the history of the case and many other details must be written in words at full length, as well as the course of treatment—whether medicinal, hygienic, or dietetic. For this purpose, every alternate couple of pages in the note-book should be left blank, or only ruled with transverse lines. Nor is it pretended that the system is yet perfect. I find it to answer my purpose; but this is no doubt partly owing to my having used it for many years, and to my being on that account perfectly familiar with it. Many of my friends have adopted it, and have been kind enough to express to me their approval of it; but I cannot expect that either they or others should find nothing in it to object to, or that they should be unable to suggest many improvements. Dexterity in the use of the abbreviations is readily acquired if one do not employ a multitude of terms to express the same fact. Simplicity and uniformity are essential to useful and intelligible notation, and I have endeavoured to combine these conditions in a small vocabulary or glossary of terms, which I hope soon to publish, but which would constitute too dull reading for the pages of this JOURNAL.

A CASE IN WHICH THERE WAS DESTRUCTION OF THE THIRD LEFT FRONTAL CONVOLUTION WITHOUT APHASIA.

By DAVID FOULIS, M.D.,

Lecturer on Pathology in Glasgow Royal Infirmary.

THE subject of this notice, a house-painter aged 64, was admitted into the Royal Infirmary, under the care of Dr. Scott Orr, on August 9th, 1878. He was under treatment for cardiac dropsy, which proved fatal on October 10th. Into the history of the clinical symptoms I need not enter in detail, as they in no way varied from those usual in such cases, and are not, therefore, of special interest. It may be stated here, however, that there was not the least symptom of any defect in the speech of the patient, who could talk with perfect fluency and correctness; and that nothing was noticed which in any way pointed to cerebral mischief, except a tendency when lying quiet in bed to carry on imaginary narratives in a casual sort of way, and to refer to events as presently occurring which had no existence save in his imagination. These imaginary events had usually some reference to the past life of the patient, such as trade-disputes, etc. Otherwise, he was intelligent and quiet, and, when spoken to, he would give correct and sensible replies. After he died, I examined the body, and the morbid appearances may be summarised as under.

Necropsy.—The body was badly nourished. The legs were dropsical. Twenty-two pints of slightly turbid yellow fluid, with flakes of lymph floating in it, were found in the abdominal cavity; a quantity of a similar fluid in the right pleural sac, along with a web-shaped layer of recent lymph; and a little clear serum in the left pleural sac. The heart was dilated and enlarged, weighing 20 oz. There were a few firm vegetations on the mitral valve; the other valves were healthy. The aorta was wide and slightly tortuous; its lining membrane was thickened and atheromatous. The right lung was much compressed; its pleural surface was like chamois-leather in appearance; its tissue was subcrepitan and still capable of floating in water. The left lung was rather oedematous. The lining of the air-tubes generally was reddened. The liver was commencing to become cirrhotic; in the gall-bladder were inspissated bile and several scores of calculi, some white and faceted, others black and mulberry-shaped. The gall-ducts and the portal vessels were patent. The kidneys were both in advanced cirrhosis. The splenic capsule was thickened and white. The urinary bladder was slightly hypertrophied. The gullet and intestines were normal. There were a few patches of red mottling in the mucous membrane of the stomach, as if from punctiform hæmorrhage; but no ulceration. The spine had a strongly marked dorsal kyphosis (not angular), and a lateral curve convex to the right side in the upper dorsal region. There were irregular exostoses over the bodies of the dorso-lumbar vertebræ. The skull and dura mater were healthy. The arteries at the base of the brain were atheromatous. The third left frontal convolution was almost entirely destroyed, along with two-thirds of the island of Reil; over this area, the pia mater was disorganised and converted into a non-vascular, transparent, shreddy membrane, adherent to the pulpy brown surface of the irregular excavation where the brain-substance was miss-

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.,
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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.