

Of these the employment of the diaphragm as a voluntary muscle is probably the most important. When the diaphragm acts in this way, in addition to its descent which is the more obvious result, the lower ribs are elevated, increasing the transverse diameter of the body at this level, this providing additional space at that part of the abdominal cavity for the viscera displaced by the descent of the diaphragm. Simultaneously the muscles of the abdominal wall come under the sphere of influence. In the breathing of repose the tonus of the broad muscles of the abdomen is such as just to admit of the necessary bulging forward which is determined by the downward displacement of the abdominal contents by the contracting diaphragm. In breathing for voice this tonus is increased, as can readily be appreciated by palpation. The effect of this hardening of the abdominal wall checks the outward bulging (which is no longer necessary), and by steadying the lower part of the chest takes a share in the control of expiration.

Regarding the other factors concerned in the control of expiration, the subcommittee are of opinion that further investigations must be undertaken before any authoritative pronouncement can be made.

H. H. HULBERT, ARTHUR KEITH, W. PASTEUR,

April 8th, 1913.

C. S. SHERRINGTON, PETER THOMPSON.

Note by Professor Sherrington on "Reciprocal Innervation."

The inspiratory and expiratory muscles are mutually antagonistic. There is reason to believe that like other antagonistic muscle-groups they obey in their relations the rule of reciprocal innervation—that is, when the motor centres of the inspiratory muscles are discharged (activated), those of the expiratory are inhibited, and conversely.

It has been shown that in the normal breathing of the rabbit the electrical current (action-current) of the diaphragm ceases altogether during the expiratory phase, but that in the abnormal breathing of the animal under chloral the action-current of the muscle (diaphragm) persists, even throughout each expiration, although in diminished intensity. The diaphragm and its motor centre are in the latter case never given a full repose at all, and fatigue of respiration ensues.

POOR-LAW INFIRMARIES AND THE TREATMENT OF SYPHILIS.

To the Editor of THE LANCET.

SIR,—It is interesting to learn from the letter of Mr. A. Lionel Baly in *THE LANCET* of July 19th that in the Lambeth Poor-law infirmary cases of primary and secondary syphilis are treated in special wards, and that every case which is considered suitable is given one or more doses of salvarsan. But perhaps I may be allowed to express some disappointment that he did not honour my Plea for the Appointment of a Royal Commission on Venereal Disease with a less cursory reading. I did not suggest that in Poor-law infirmaries "no use whatever is made of salvarsan." The words quoted were applied by me not to Poor-law infirmaries generally nor even to metropolitan Poor-law infirmaries generally, but to the three institutions at which inquiries had been made on my behalf. I expressly said that I had no detailed information about the metropolitan Poor-law infirmaries, and all that I suggested as to them was that their facilities for the treatment of syphilis according to modern methods were probably even less than those at the command of the general hospitals.—I am, Sir, yours faithfully,

July 22nd, 1913.

MALCOLM MORRIS.

SURGICAL TUBERCULOSIS IN CHILDREN.

To the Editor of THE LANCET.

SIR,—With much of Mr. A. H. Tubby's review of the methods and results of the treatment of surgical tuberculosis the majority of orthopaedic surgeons will agree. In seeking, however, to make good his case in favour of extra-urban v. urban treatment he has compared the results of conservative treatment in the country with operative treatment in the town. Thus, he has contrasted results obtained by conservative treatment at the Sevenoaks Hip Hospital with results obtained by operative treatment in four London children's hospitals, and presented them to us as if they were really comparable. An opponent of his scheme would be perfectly justified in arguing that it was the conservative treatment which produced the better results, and not the climatic treatment; and he would be enormously strengthened in his argument by Sir Anthony Bowlby's statistics of the Alexandra Hip Hospital, published in 1908.¹ In 12 years there passed under Sir Anthony Bowlby's care 900 children with hip disease; they were treated by conservative methods; 867 were cured and 33 died, a mortality of 3.7 per cent. The hospital lies in the heart of London; and 266 of the 900 were treated in their own homes, and were never even in-patients.

During the last three years I have been working under Mr.

T. H. Openshaw in the orthopaedic department of the London Hospital, and I *know* that the very large majority of cases of surgical tuberculosis respond readily to efficient conservative treatment regardless of the east-end climate. Though perfectly aware of the value of extra-urban treatment in certain cases, may I venture to suggest that what is really wanted is increased hospital accommodation in London for these cases, where they can remain in-patients as long as is required, and where they can receive treatment on rigid conservative principles?

I am, Sir, yours faithfully,

Harley-street, W., July 21st, 1913.

PAUL B. ROTH.

SUPRAPUBIC CYSTOTOMY.

To the Editor of THE LANCET.

SIR,—In his interesting and instructive paper published in *THE LANCET* of July 19th Professor F. C. Madden has drawn attention to a subject which has interested me for some time past, and which is of great importance—namely, the relation of the peritoneum to the dilated bladder.

Professor Madden rightly lays stress upon complete exposure of the parts in the operation of suprapubic cystotomy. It is stated in the text-books of anatomy and surgery that when the bladder is dilated the peritoneum is stripped off the front wall of the bladder. This is not at all an accurate statement. From my experience of surgical operations, backed up by anatomical investigation, I am in a position to make the following statements. When the bladder is dilated, so that its upper end lies well above the pubes, there is a narrow triangular area of bladder about $\frac{1}{4}$ in. broad and 1 in. long, uncovered by peritoneum, situated on its anterior surface, and just above the pubes. This is produced by the ascent of the urachus carrying with it a fold of peritoneum. On either side of this narrow triangular area there is the general peritoneal cavity extending downwards to below the level of the pubes.

In the operation for suprapubic puncture of the bladder a very slight deviation from the point indicated in the text-books will lead to the point of the trocar passing through the general peritoneal cavity on its way to the bladder, and I believe that general peritonitis has been caused by suprapubic puncture, and has been overlooked owing to the state of the patient, death being ascribed to the urinary condition, for which the suprapubic puncture was performed. If, on the other hand, the bladder is exposed in an operation, I am sure that it is necessary to push the peritoneum aside laterally, as well as upwards, in order to avoid cutting into the peritoneal cavity.

Finally, owing to lack of appreciation of the anatomical relations of the peritoneum to the dilated bladder, many surgeons teach that there is an area of dulness in front of the bladder. This may be so in a certain number of cases, but certainly not in the majority, as the intestines descend in front of the full bladder.

For this reason palpation of the distended bladder is of far greater clinical importance than percussion over the bladder area. Bearing in mind these anatomical relations, I am accustomed to teach that suprapubic drainage of the full bladder is a safer procedure than suprapubic puncture.

I am, Sir, yours faithfully,

RALPH THOMPSON,
Surgeon in charge of the Genito-Urinary
Department, Guy's Hospital.

Wimpole-street, W., July 22nd, 1913.

THE AUTHORSHIP OF THE LOCKER-LAMPSON AMENDMENT.

To the Editor of THE LANCET.

SIR,—I beg you will forgive my troubling you, but a mistake has arisen and I have been blamed by many doctors for an amendment to the National Insurance Act which will transfer the administration of medical benefits to Approved Societies. May I say that this amendment is not mine, is not down in my name, and has never had my knowledge or approval. It is proposed by my brother, Mr. Godfrey Locker-Lampson, with whom I have as yet had no opportunity of discussion.

Having received no less than 18 letters to-day alone from doctors upon the subject, I shall be very grateful if you

¹ *Brit. Med. Jour.*, June 20th, 1908; *THE LANCET*, March 7th, 1908.