alimentary tract, and the medium by which it is introduced is infected milk. As far as possible observations were noted of the source of milk supply in each of the above cases; 25 cases were nourished in infancy upon human milk, 41 were entirely fed upon cow's milk; in 3 instances the source of origin was doubtful.

Of the 25 cases brought up on human milk, in only 6 cases was the bovine bacillus found. The remaining 19 were infected with the human type. In the second group, those nourished upon cow's milk, out of a total of 41, no less than 37 were due to infection with the bovine bacillus. The remaining 4 were human. In the complete series there were 4 children less than 1 year old. All these children were nourished upon cow's milk, and in every case the bovine bacillus was the organism present.

TABLE III.—Types of Organism in Relation to Milk.

Source of Milk.	Human Bacillus.	Bovine Bacillus.
Human milk	19	6
Cow's milk... ..	4	37

It is interesting to note that in no instance was any attempt made to sterilize or pasteurize the milk.

CONCLUSIONS.

1. It is possible by certain tests to distinguish between human and bovine types of tubercle bacilli.
2. A considerable proportion of bone and joint tubercle of children in Edinburgh is due to infection by the bovine bacillus.
3. The bovine bacillus is introduced into the body by the drinking of infected milk.
4. A considerable proportion of the cases of tubercle due to the human bacillus are the result of the direct infection of the child by a consumptive co-resident.

My thanks are due to Mr. Stiles and Dr. James Ritchie for materials and help. The McCunn and the Carnegie Trustees have provided financial assistance, and I wish to acknowledge my indebtedness to them.

REFERENCES.

- ¹ Burckhardt, H.: *Deut. Zeit. für Chirurg.*, Bd. cvi, 1910, S. 1.
- ² Cobbet, L.: Royal Commission Reports, Second Interim Report, 1911, Part I, 13.
- ³ Dorset, M.: *American Medicine*, 1902, iii, p. 555.
- ⁴ Henschen, G. E., Jundell, I., and Svensson, J.: *La lutte contre la Tuberculose en Suède*, 1905, p. 80.
- ⁵ Kossel, H., Weber, A., and Heuss: *Tuberk. arb. a.d.k. Gesundheits-amte*, 1904, i, S. 1; 1905, iii, S. 1.
- ⁶ Oehlecker, F.: *Tuberk. arb. a.d.k. Gesundheitsamte*, 1907, vi, S. 88.
- ⁷ Park, W. H., and Krumweide, C.: *Studies from the Public Health Laboratories of New York*, 1910.
- ⁸ Royal Commission Report, Final Report, 1911, Part I, p. 13.
- ⁹ Smith, T.: *Journal Exper. Medicine*, xlii, 1904-5, p. 405.
- ¹⁰ Thomson, J.: *British Journal of Tuberculosis*, 1907, i, p. 250.

THE International Congress on the prevention of the deterioration and the adulteration of foodstuffs will be held at Ghent on August 1st, 2nd, and 3rd. M. Henry Carton de Wiart, Minister of Justice, is an honorary president, and the presidents are the Burgomasters of Brussels, Ghent, Antwerp, and Liège. The work of the congress will be divided into four sections: Chemistry; hygiene; consumption, education and popularization; legislation. Among the subjects on the programme of discussions are the following: Protection of food substances against dirt; Regulation of the production and of the trade in table waters (mineral, aerated, etc.), as well as of ice and water sold to consumers; Is it necessary to institute official methods for the analysis of foods? Regulation of the production and trade of milk and its by-products destined for human food; To what degree can the incorporation of antiseptics be tolerated in foodstuffs? The basis of organization of a service of inspection in the trade and in the manufacture of foodstuffs; The conditions of places of production (factories) of foodstuffs and retail shops. Rules for the washing of glasses in public-houses. Reports to be presented should be in the hands of the secretary before May 1st, 1913. In connexion with the congress there will be an exposition of foodstuffs and the methods by which they are prepared for consumption, and by which they are adulterated. The milk supply will occupy a prominent place in the exhibition, well-kept and badly-kept farms, and the right and wrong method of transport, and so forth, being shown. Communications should be addressed to M. Antony Neuckens, Secretary of the Congress and the Exhibition, Hôtel de Ville, Brussels.

CLINICAL DEMONSTRATION OF AN OPERATION FOR PROLAPSUS UTERI COMPLICATED BY HYPERTROPHY OF THE CERVIX.*

By W. E. FOTHERGILL, M.A., B.Sc., M.D.,

SURGEON TO THE ST. MARY'S HOSPITALS, AND ASSISTANT GYNAECOLOGICAL SURGEON TO THE MANCHESTER ROYAL INFIRMARY.

WHEN prolapse is complicated by hypertrophy of the cervix, it is usual to begin the operation for its relief by amputating a suitable portion of the cervix, and suturing the resulting wound in the customary way. Then an anterior colporrhaphy is performed, a fresh incision being made separate from that required for the amputation of the cervix. If the anterior vaginal wall is removed at all freely the two incisions approach one another very closely, a poor and narrow bridge of sound tissue being left between them. Further, the amputation of the cervix tends to shorten the anterior vaginal wall; and thus, when the colporrhaphy has been completed, the cervix still points downwards and forwards, and the uterus is left in a

Fig. 1.—Colporrhaphy incision for prolapse.

Fig. 2.—Incision for amputation of cervix with colporrhaphy in prolapse complicated by hypertrophy of cervix.

position of retroversion which is very favourable to the recurrence of prolapse.

For some time I have been using a single incision for both the amputation of the cervix and the anterior colporrhaphy, and have found the results more satisfactory than those obtained by doing the operations separately one after the other.

In order to make clear this little modification in technique it is necessary to explain once more how I treat ordinary cases of prolapse in which the cervix is not hypertrophied. The anterior colporrhaphy is done so that the wound is broad above and narrows to a point near the urethral orifice. The piece of vaginal wall removed is, roughly, an equilateral triangle with its base touching the cervix and its apex near the opening of the urethra. The easiest way of making the incision is to pull down the cervix with a vulsellum and then to pick up with forceps two points about 3 in. apart, one directly to the right, the other directly to the left of the

* Given in the Post-Graduate Course at the Manchester Royal Infirmary, March, 1913.

os uteri. The vaginal wall is put on the stretch and is cut through between the tips of the instruments. It is then easily separated from the bladder and parametria, and a triangular portion is cut away. This extension of the wound into the lateral vaginal fornices exposes the connective tissue on either side of the cervix—the right and left parametria. When the wound is closed from side to side, the tissues which previously lay at the sides of the cervix are united in the middle line in front of the cervix, which is thus pushed back towards the hollow of the sacrum. This manoeuvre tilts the fundus forward, so that the uterus becomes anteverted. The suturing begins at the cervical end of the wound, for, as the stitches are tied one after another, this end of the incision, with the cervix behind it, disappears from sight; and, if the incision has been broad enough, cannot be seen again. The closing of the lower part of the wound corrects the cystocele, and thus anterior colporrhaphy, done as above described, remedies both the retroversion and the cystocele, whose combination is the characteristic feature of classical prolapse. Interrupted sutures are used, for if a continuous suture, or even a series of mattress sutures, be employed, the incision is shortened, and thus the cervix is pulled downwards and forwards. This spoils the operation, whose special aim is to push the cervix upwards and backwards. To complete the treatment the vaginal outlet is restored to its normal size by repairing the perineum, the upper part of the posterior vaginal wall being left alone.

The modification of this operation which I have been using in cases of prolapse complicated by considerable hypertrophy of the cervix is as follows: The cervical canal is dilated, and a circular incision is made round the cervix with a knife. The vaginal wall (also the bladder, if necessary) is then snipped free with scissors and is pushed back from the cervix, which is next deeply split into anterior and posterior lips. These lips are then amputated so as to leave the uterus about 3 in. long, and a few sutures are inserted in the stump of the cervix to control bleeding.

The vaginal wall is next incised for an inch or so on either side of the circular wound already made, the new cuts extending directly to the right and to the left. The anterior vaginal wall is now separated from the parametric tissues and from the bladder, and a triangular portion, with its apex near the urethral orifice, is cut away.

In closing the wound thus made the stump of the cervix is stitched into the posterior part of the incision. The first suture brings together the central point of the posterior margin of the vaginal incision and the mucosa lining the posterior wall of the cervical canal. The second and third sutures unite vaginal wall and vaginal mucosa right and left of the first; and so on, until the sides of the vaginal incision come together in front of the stump of the cervix. By this time the newly constructed os is beginning to disappear upwards and backwards. The lateral edges of the vaginal wound, with the subjacent connective tissue, are brought together in the middle line from behind forwards, and the line of suture disappears from view as the later sutures are tied and the urethral end of the incision is reached. Finally, the perineum is repaired as before.

This method of operating has been found convenient both when the elongation of the cervix is mainly supravaginal and also when the vaginal portion is chiefly involved. It is not necessary to discuss the various causes of hypertrophy of the cervix; but, before leaving this subject, I should like to express complete scepticism as to the existence of the so-called tensile elongation which was supposed to be produced by the dragging upon the cervix of prolapsed vaginal walls. Such a change might possibly occur after the uterus has been fixed to the abdominal wall by a ventrifixation. But if the uterus is not fixed above, how can it be lengthened by pulling on it below? The theory of tensile elongation seems to be a relic of the times when the uterus was thought to be held up by the broad and round ligaments. Now that the cervix is well known to be the most firmly attached portion of the organ, the theory of tensile elongation may surely be allowed to drop gently into oblivion. All the forms of cervical hypertrophy and elongation can easily be explained without its assistance.

A "SUPPURATING" BRANCHIAL CYST.

BY

C. A. ROBINSON, B.A., M.B., B.C.,

AND

GORDON W. THOMAS, M.B., B.S., F.R.C.S.,

LEOMINSTER.

The following case is, perhaps, sufficiently rare to be worth recording:

Mrs. B., a young married woman, was seen by my partner, Dr. C. A. Robinson, towards the end of 1911, when about five months advanced in her first pregnancy. She then had a small swelling on the left side of the neck, beneath the sterno-mastoid muscle, which was of recent appearance. Deciding that the swelling was neither malignant nor tuberculous, Dr. Robinson advised that it should be left alone for the time. It did not fluctuate, and was thought to be a small fibrous or fatty tumour. As pregnancy advanced it gradually increased in size.

The patient was confined early in April, 1912. Later in the month we saw her together. The swelling was then large, occupying the upper half of the neck, and extending well forwards into the anterior triangle and also backwards into the posterior triangle beneath the sterno-mastoid muscle. It fluctuated very distinctly and was not tender. The patient gave no history of enlarged glands or carious teeth, but there was a history of tuberculous disease in her family. With an exploring syringe thin turbid fluid was found. An attempt to drain the cavity at its lower end, by an incision under local anaesthesia at the posterior border of the sterno-mastoid, proved unsatisfactory.

On May 5th, 1912, under an anaesthetic, the former incision was enlarged, after another incision had been made along the posterior border of the sterno-mastoid, near its upper end; a large amount of thin turbid fluid was evacuated, and a good sized drainage tube passed through from one opening to the other. As the amount of discharge diminished the tube was gradually shortened, being left in at the lower end, as the upper incision soon healed. When, however, the tube was removed it was found that a reaccumulation of fluid occurred, and it was clear that the cavity had not been closing up inside to the extent supposed.

On June 2nd the patient was again anaesthetized; the old incisions were reopened and the intervening tissues slit up on a director along the posterior edge of the sterno-mastoid, thus laying the cavity completely open. On digital exploration the cavity was found to extend far forwards into the anterior triangle of the neck and upwards nearly to the mastoid process. Its lining wall was perfectly smooth, with no suggestion of granulation tissue. There was no sign of a connexion with the cervical spine (caries) nor any trace of broken-down gland tissue. The cavity was swabbed clean and packed with iodoform gauze. It was at this stage that we suspected the condition might be a suppurating cyst (possibly branchial), as the diagnosis of retropharyngeal abscess or abscess due to a breaking-down tuberculous gland found no support at this operation, and the smoothness of the wall of the cyst was suggestive. The wound was dressed daily for some time, but granulation tissue was not readily formed. With a view to destroying the lining membrane, iodized phenol was applied. This was successful as far as the anterior (and larger) portion of the cyst was concerned, as it gradually filled up completely.

The upper part of the cyst did not heal in like manner, in spite of careful packing with gauze, and thus a sinus was left, 3 in. long, passing upwards along the posterior border of the sterno-mastoid. This sinus was drained by a small tube and was repeatedly treated with iodized phenol, but did not heal; removal of the tube at once resulted in accumulation of thin purulent fluid.

The patient was loth to undergo another operation and went on in this state for several months. Finally she consented, and the third operation was done on February 4th, 1913. She was then about five months pregnant (a second time). A solution of methylene blue in hydrogen peroxide was first injected into the sinus, so as to stain the whole cavity and any side tracks which might otherwise have been overlooked. On slitting up the sinus it was found to lead into a small cavity, the wall of which consisted of dense fibrous tissue; the lining membrane was greyish and irregular with a granular surface. The wall of the cavity and sinus, with a good deal of surrounding scar tissue, was dissected out almost completely. Part of the fibrous wall which was closely adherent to the internal jugular vein was left. The cavity was packed with iodoform gauze, and the latter, soaked in iodoform and glycerine emulsion, was used for the subsequent dressings. The patient stood the operation well. The cavity filled up remarkably quickly. Two or three small portions of lining membrane which had been left behind had to be touched with iodized phenol, which destroyed them successfully.

Healing was complete one month after operation. A piece of the tissue removed was sent for microscopical examination to the Clinical Research Association, and the following is the report:

We agree that this specimen is a suppurating branchial cyst or dermoid. It is lined by epidermis, and shows much leucocytic infiltration beneath the lining membrane, and in the