

postponed till the third day, when we know that a streptococcal wound infection may show the first signs of reaction in as early a time as six hours? Further, the minuteness and the nature of the wound caused by a suctorial insect (such as a flea) probably both aid in enabling the bacilli to pass on without multiplying locally.

2. *Why is one set of glands, and most usually those of the groin, alone affected?*—Because these are the glands draining the area of inoculation; in them the bacilli are first arrested and multiply greatly before passing on to other groups or the blood stream. In them they die first and in greatest numbers and in consequence set up an intense local reaction—the bubo.

3. *Why are buboes sometimes absent?*—Because the bacilli have entered the body by other routes than skin inoculation; or, if the latter has occurred, they have escaped the nearest glands by entering more directly into the blood stream or have multiplied in the glands to a less extent than usual.

4. *Why do buboes sometimes appear as late as the second week of the disease?*—This has been already explained.

5. *Why do no symptoms appear during the incubation period of this disease (and probably some other diseases), though we know that during this period the bacteria are multiplying rapidly and must be present in great numbers?* Because the living bacilli are not toxic and it takes some days before anti-microbial bodies or other forces can destroy a sufficient number of the bacilli and so set free large doses of toxin.

It will be seen that this view, if adopted, lends strong support to the skin inoculation theory of plague, so ably set forth and supported by Dr. J. Ashburton Thompson of Sydney in his "Plague Reports," and which our experience here gives us strong grounds for supposing to be correct. To conclude, the theory I have set forth may be summed up in an apparent paradox: The onset of signs and symptoms in plague is the first indication of commencing recovery from the disease!

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THE SUPRAPUBIC DRESSING.

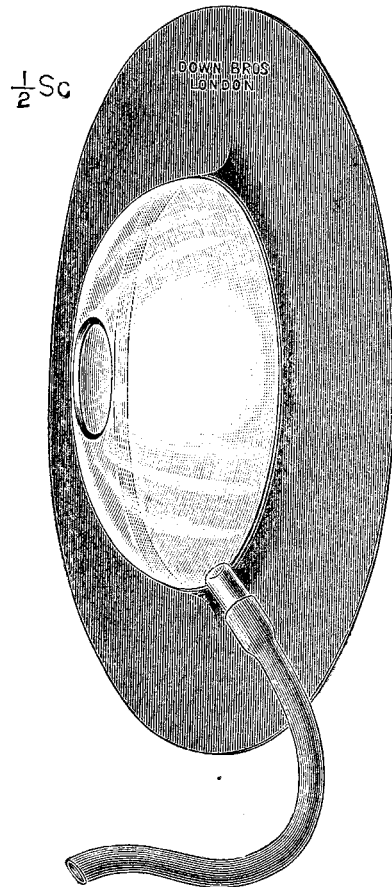
By G. H. COLT, M.A., M.B. CANTAB., M.R.C.S. ENG.

IN THE LANCET of Nov. 4th, 1905 (p. 1322), there is an account of some experiments which led up to a device described as a new dressing for cases of suprapubic cystotomy. The selection of the size of the apparatus was necessarily a matter which needed more extended observation and as a result of this it has been found necessary to add to the set of apparatus the two pieces described below. The oval glass has been produced by Messrs. Down Bros., Limited, only after very considerable trouble and expense. Whereas the cylindrical pattern can be readily made by a glass blower from glass tubing the oval pattern has to be manufactured by means of a mould. It is unnecessary to enter into a description of the various experimental patterns which were made to determine the size and shape of the oval. The final steel mould was made as a sequence to these experiments and the oval glass as now turned out from it is very satisfactory. The accompanying illustration shows the pattern to half scale but it is difficult to show in a drawing the many small points material to the actual apparatus.

The chief points are the following. 1. The sides bulge out in a regular manner all along the circumference of the oval, so that the rubber fits the glass evenly and closely and there is no leakage of urine or lotion between the two. 2. A groove is provided so that the rubber can be tied on to the glass. This is unnecessary in the case of the cylindrical vessel, but in the oval pattern leakage is liable to occur unless the rubber is fastened in some way. 3. All the edges are rounded off and the base is also machined up flat so as to avoid the risk of ulceration from unequal pressure. The oval pattern is large enough to cover the very largest wound that is likely to be made and it can be applied so soon as the urine is free from blood clot, that is to say, on the second or third day after the operation. The method of its application is precisely as described in the former paper, and is now well known. The chief essential detail is to shave the skin very close. It is often noticed that the edge of the rubber disc curls up in places after it has been applied. As a rule it uncurls again of its own accord and becomes fixed to

the skin. This curling up does not occur when the solution is used in small quantity and is well rubbed in, but it sometimes happens that this is impossible.

The second addition to the set of the apparatus is the provision of two separate oval pieces of sheet rubber, each measuring six inches by four inches, and having punched out in the long axis of the oval, but half an inch eccentrically, a hole of the size required for the large or the small cylindrical glass. A pendulous abdomen interferes with the application of the oval glass by reason of its size and it is far more satisfactory in these cases not to increase but to diminish the size of the *rigid* part of the dressing and to



Suprapubic dressing, oval pattern.

increase at the same time and to the same extent the *flexible* part—namely, the rubber. This at once solves the problem and as the rubber adapts itself excellently to all folds and wrinkles the small glass remains suspended over the wound and is efficient. A very large wound can be dressed in this way, and since the troubles of nursing these patients by the old method varied directly with the weight of the patient and the size of the abdominal wall, the latter when large being frequently coincident with a pendulous abdomen and a gaping wound, the utility of this simple addition is evident.

In case it should be desirable for the patient to get up while he is wearing the oval glass this is also made up as a separate piece with the dome solid except for a pin-hole opening remote from the exit-tube. The risk of urine overflowing as the patient moves about is thus minimised. These cases are not common as a matter of experience, though one would expect them to be so since prostatectomy is common and the patients are generally over 50 years of age and liable to bronchitis. It is unnecessary, therefore, to enter on this part of the subject at greater length here. If the small cylindrical glass is used for this purpose the variety with a side tube in place of the hole at the top is employed so that the margin of safety from overflow may remain the same. The selection of the piece best suited to the case is a matter which anyone who understands the principles involved can make for himself without much difficulty.

There is no doubt that the dressing can be both used and abused. For instance, it is not uncommon to see the wound inside the glass remaining uncared for. Several such wounds have closed while the glass has been in place but it is probable that they would have closed sooner if they had been attended to regularly, say once a day, by means of a pair of sinus forceps or with a probe passed through the upper opening of the dressing. The caustic probe is particularly useful

in this respect and is much more handy and efficient than a stick of caustic. Moreover, the ease with which the caustic can be renewed by redipping the probe in fused silver nitrate which is on the point of solidifying results in a great saving of caustic. Apart from this lack of attention to the wounds their condition is precisely what it was when they were dressed with gauze and on drying and inspecting them no difference between the two can be discovered. Then, again, the discs of rubber with the holes properly punched out and of exactly the right size are more efficient than any that can be cut out by hand alone and no other quality or thickness of rubber has been found which is more efficient than that supplied. It is not uncommon to see makeshifts employed, perhaps to the discredit of the device and for lack of renewal of stock. Further trials of a few varieties of plaster show that none approaches in respect of efficiency the present method of utilising a solution of rubber in naphtha, indeed, no plaster yet tried has remained in place for more than six hours without becoming soaked through. When the rubber solution becomes too thick by evaporation the addition of a small quantity of naphtha or benzine well stirred in it will improve it.

It is common now to perform any washing out that may be necessary by means of a catheter introduced either through the penis or through the top of the glass, the excess lotion being allowed to flow off through the exit tube. Patients take their bath after the rubber tube has been detached without having the rest of the dressing removed. It is also found that continuous irrigation of the bladder is easy to arrange. There are, however, no results from this method of treatment to record at present, but *a priori* one would expect a good deal of benefit from it in certain cases, especially in those in which phosphates are deposited in the bladder. Increased experience shows that five days and not four is the average *minimum* period for the dressing to remain efficient without needing attention. At the end of this time it is good practice to omit it for 12 or 24 hours, so that the skin and the wound may be well cleaned up before the dressing is reapplied, but this is by no means essential. Phosphates may be removed from the glass at the same time by soaking it in dilute hydrochloric acid. No cases of ulceration of the skin have been reported so far and in the only two cases in which the dressing failed ulceration sufficient to prevent the efficient application of the rubber solution was already present. In these two cases the device was a complete failure.

It would perhaps be as well to mention here that the common causes of overflow through the hole in the top of the glass are (1) the exit tube being at some part of its course above the level of this hole; (2) the exit tube being too long and the distal end being in consequence coiled up in the receptacle beneath the bed; (3) the exit tube being interrupted by a joint (this is unnecessary); and (4) syphonage occurring through the wool or gauze which is used to cover the top of the dressing having sagged down into the glass. No harm results from omitting this covering entirely. The dressing, unless working efficiently, is a trouble rather than a benefit to the patient, because the uncertainty renders it necessary to examine him frequently to see if he is wet and to dress his wound in both ways at once to insure his being kept dry. This means double the work. Sometimes a patient picks off the rubber in his sleep, but this is not a common cause of leakage. To cause the dressing to work efficiently certainly does demand a small amount of attention. The cause of the inefficiency is not far to seek, as a rule, and when found and removed efficiency is insured and the patient remains dry with much less inconvenience and without any harm resulting so far as can be seen. The longest time so far during which the patient has remained dry from a single application of the dressing is a fortnight. When one considers that during that period by the old method the patient would have needed dressing about 100 times with a change of the draw-sheet each time, and very often with a change of his shirt as well, the practical utility of the device as a mere labour-saving machine and quite apart from the patient's comfort is obvious. The saving in cost of dressings during the fortnight would be between £2 and £3 and the saving of time to the nurse about 24 hours. The numbers of the separate pieces composing the complete set of apparatus have been revised in accordance with the demand. The various items can also be obtained separately.

In conclusion, I wish to thank all those who have reported their cases to me or who have allowed me to watch the

progress of them. Such a system lends itself admirably to improvement in surgical technique, but at present the failures recorded are all too few and probably several points still remain to be elucidated as they arise.

St. Bartholomew's Hospital, E.C.

A Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Prooemium.

WESTMINSTER HOSPITAL.

A CASE OF PUERPERAL ECLAMPSIA IN WHICH THERE WAS
CESSATION OF THE URÆMIC SYMPTOMS AFTER
REMOVAL OF CEREBRO SPINAL FLUID.

(Under the care of Dr. RICHARD G. HEBB.)

FOR the notes of the case we are indebted to Mr. J. A. Braxton Hicks.

The patient, who was 29 years of age, was admitted on May 26th, 1906, to the Westminster Hospital. The history of the illness was to the effect that since May 16th she had been suffering from the following symptoms: œdema of the feet, legs and face; severe and persistent frontal headache; passage of scanty high coloured urine; drowsiness; and just previously to admission "fits." She further stated that she was six months pregnant and that she had had five previous pregnancies, the last ending in a miscarriage at the third month. All the labours had been instrumental but there had been no other untoward symptoms. The family history was good and there was no previous history of fits. When first seen by the house physician, Mr. J. G. Gibb at 4.45 P.M. her condition was as follows. She was very drowsy and complained of headache; there was moderate œdema of the face and legs; the temperature was 98.4° F; the pulse was of high tension; the second cardiac sound was accentuated and the first sound was reduplicated, but no bruit or enlargement of the heart could be detected. On examination of the abdomen the fundus of the uterus was found to reach to the level of the umbilicus and the uterus contracted under the palpating hand. The uterine souffle and foetal heart were both heard. Bimanually the cervix was found to be soft; the os admitted a finger and foetal parts and movements were felt. The urine was high coloured and became semi-solid on boiling. It contained much serum albumin, a little globulin, hyaline and granular casts, red corpuscles, leucocytes, epithelium, and pigment granules. At 6 P.M. she had an epileptiform convulsion, attended with much cyanosis and preceded by a cry. The right side of the body was most affected. Chloroform was administered. At 8.45 P.M. she had another convulsion. Chloroform was again given and three laminaria tents were inserted into the cervical canal. After this there was frequent vomiting and morphine was prescribed. Next day (the 27th) at 7 P.M. the patient aborted. The placenta and membranes were detached by the finger. There was very little uterine hæmorrhage after delivery. During the night the temperature rose to 99.2° but by the next morning it was 98.4° and afterwards remained normal. On the 28th she had three more convulsions, two of which were fairly severe. Dr. Hebb then decided to try lumbar puncture as had been recommended by some for uræmic convulsions. Lumbar puncture was accordingly performed and at first the cerebro spinal fluid flowed into the test tube in a continuous stream instead of drop by drop as is normally the case. The fluid withdrawn measured 38 cubic centimetres; it was found to contain no urea but it reduced Fehling's solution, giving also glucosazone crystals. From the time lumbar puncture was performed till the patient left the hospital her condition rapidly improved. The drowsiness soon disappeared and the pulse tension diminished but the first cardiac sound remained reduplicated and the second sound accentuated. By the 31st the headache had entirely disappeared. On June 1st the top of the uterus could not be felt through the abdominal wall. On this day also the