

diverting the urine from the imperfect vesical reservoir into a rectal one, as had been done in the previous cases, was not applicable here, as the rectal sphincter was, in this case, paralysed, and would not hold water. I could find no reference to such a case in the manuals of surgery or in monographs on urinary diseases, and it was only after much thought that I determined to close the urethral opening, and make a permanent suprapubic opening as high as possible and to which an appliance could be fixed that would carry off the urine. How this idea was successfully carried out I will now proceed to show. The formation of a suprapubic opening did not present any difficulties, as the bladder could be pushed up into the wound by the aid of a catheter. The bladder wall was stitched to the wound in the skin, and the wound allowed to heal before the urethra was closed. The closure of the urethra is apparently a simple operation, but in practice I found it very difficult. Suprapubic drainage is very imperfect. The tube in the bladder becomes surrounded by mucous membrane and is practically closed, whilst the urine issues by the side of the tube, and, worst of all, the forces of nature tend to send the stream by the old channel, the urethra. Hence union of the plastic wound to close the urethra is not always or often sound along the whole line of suture the first time, and several operations were required in this case before closure was complete. Experience suggests the following directions to the operator who wishes to close the urethra: First, insert a thin elastic ring pessary into the bladder through the suprapubic opening, which, when it expands, is to lie in the fundus vesicæ, with part of its circumference over the inner orifice of the urethra. This ring keeps the bladder from contracting, converts it into a pool that can be drained by a syphon, stops the natural tendency that exists to force the urine into the urethra, and blocks that opening. This extraordinary procedure was of great value, and I would certainly adopt it again. Its insertion, retention, and removal did not present any difficulties or inconveniences, although, theoretically, it should have produced both. The urethra is best closed by splitting the mucous and muscular coats, turning the former in towards the bladder, and stitching together its raw and now external surfaces with numerous fine catgut sutures. The raw surfaces of the muscular coat are simply brought together by fine silkworm gut sutures. The method of drainage is simplicity itself. It consists in the ivory nozzle of a Higginson's syringe with the curves of the neck and

aperture and keep the patient dry, but we found that the Higginson's nozzle was more effectual than all our perfect theoretical notions, and it took us some time to realise theoretically how such a simple contrivance was effectual. The patient left the hospital on Aug. 8th, 1896. She came to show herself on March 17th, 1897, with the apparatus in good working order, her skin quite dry, and healthy, no urinary odour about her, and her linen clean and unstained. She can manage quite well, no urine escaping except a little sometimes at night when she is asleep. Her uterus is protruding, and we have recommended an advancement of the perineum to support it, but as far as the incontinence is concerned the results have exceeded all our expectations. It supersedes completely the rectal reservoir idea, and does not come far short of affording all the advantages of the natural condition.

Liverpool.

## Clinical Notes :

### MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

#### NOTES ON THE INJURIES IN THREE CASES OF PERSONS STRUCK BY LIGHTNING.

BY E. POCKLINGTON, M.R.C.S. ENG., L.S.A.,

AND

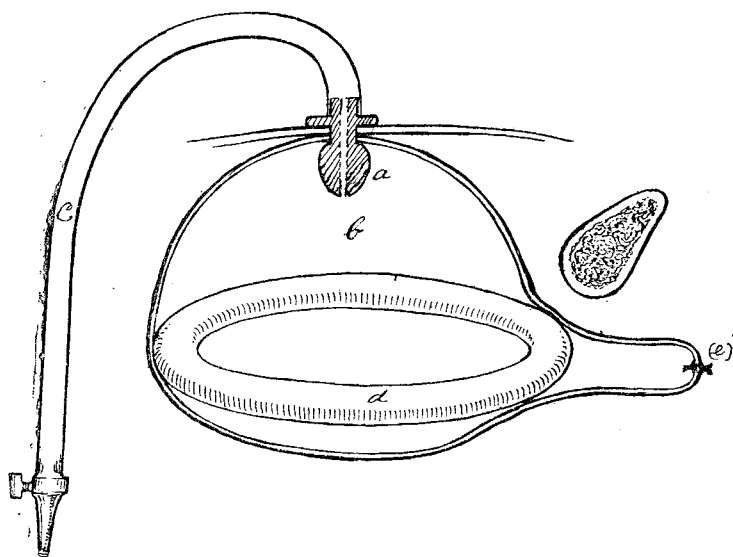
R. T. POOLE COLLYNS, M.R.C.S. ENG.

As cases of injury from lightning are comparatively rare in this country the following may be of interest, having recently occurred in our practice.

On June 24th, at about 6 P.M. we were informed that one man and two boys had been injured on Wimbledon Common. The boys were aged respectively nine and eleven years, and had taken refuge from the storm in a temporary wooden structure without a roof, but they had apparently taken a sheet of galvanised iron, and propped it up on the wood as a shelter. When seen they were cold and collapsed, with a slow pulse, and seemed dazed; hearing was much impaired, but the eyesight was not affected; the elder one had a patch of hair, 1 in. by 3 in., over the left parietal bone singed and a red bruise on the left forearm; he complained of shooting pains in both wrists, the right being the worse. During the night both of the patients were violently sick, but in the morning they seemed but little the worse for the accident, except that they were slightly deaf. On examining the clothes after they were dry a dark round patch, the size of a shilling, was seen on the cap of the elder one, and two singed lines on the inner side of the left shirt sleeve.

The man was aged nineteen years, and was quite dead when found. A necropsy was made twenty-one hours after death. The body was well nourished. Rigor mortis was just commencing. The hair over the left parietal bone and on the left half of the body and the left leg was singed; there was a burn over the left clavicle where the brace buckle had rested, and there were also small round burns corresponding to the eyelet holes of the boot on the dorsum of the left foot. Arborescent lines were present over the whole of the body, being most marked on the left side of the chest and on the left thigh. On removing the skull cap a minute fissure which corresponded with the singed patch of hair was found; the vessels of the dura mater were gorged and the left ventricle of the brain contained much fluid, while the right contained only a normal quantity; the blood throughout the body was fluid and there was only one small clot on the left side of the heart; all the organs were much congested. On examining the clothes a small hole was found in the cap and the inside lining was much torn. The left sock was in rags and the left boot was burst open along the outer side. The sole was intact; the nails round the sole were brass, but there had evidently been three large steel nails as in the usual place for these there were holes with charred edges.

Wimbledon.



The diagram represents the ivory nozzle (a) in the bladder (b), with its tube and stopcock (c), the pessary (d) lying in position in the bladder during the closure of the urethra, and the method of closure of the urethra (e).

body of the nozzle exaggerated so as to have the shoulder below the neck more pronounced. A rubber tube with a tap at the end that can be brought through the dress and so allow the bladder to be emptied with more than usual facility completes the apparatus. It is really self retaining, but a bandage round the body prevents the ejection of the tube under any great strain or awkward twist of the body. When the tap is closed the urine collecting distends the bladder and the tube, and as these become distended the internal hydraulic pressure keeps the shoulder of the nozzle applied to the inner margin of the opening until the patient feels the distension and lets the water flow away. Dr. J. A. Craig and I were planning all sorts of apparatus to fit the