to exhaustion caused by the prolonged labour, the uterus did not contract well. After ascertaining that the passage to the vagina was patent, the uterus was sutured by chromicised catgut passed deeply into the tissue. The peritoneal cavity was sponged out, and the wound in the abdominal wall secured by six silk sutures passed deeply, so as to include the whole thickness of the wall and peritoneum, and superficial ones through the skin between these. The wound was dusted with iodoform, covered with wood-wool, and secured by four broad strips of adhesive plaster and a flannel binder over all. The external genitals were covered with carbolic tow and cotton wool. During the suturing of the external wound, vomiting set in from the chloroform, but it soon ceased, and the patient was put to bed, with a pulse, though weak, as good as before the operation. A hot water jar was put to her feet, her head covered with flannel, and a hypodermic injection of morphine given. In the evening I found her in a satisfactory condition, but retching and vomiting at intervals. Ordered nothing to be given by the mouth except small quantities of brandy and iced soda-water. Passed the catheter.

December 5th. Comfortable, but retching a little; passed catheter. In the evening she complained of rather severe pain in the right side of the abdomen with accelerated breathing; pulse 136, temperature 99.4°. Gave a quarter of a grain of morphine hypodermically, passed catheter, and syringed out the vagina with carbolic acid lotion. One grain of opium to be given every four hours until pain ceased.

December 6th. Found her much better, having slept after the morphine; pain almost gone; expresses herself as feeling comfortable; had passed urine voluntarily.

For the next two days her condition was fairly satisfactory; scarcely any pain; temperature never higher than 99.4°, but pulse continued to increase in rapidity and weakness. During the entire treatment, nourishment was given by means of enemata consisting of beef-tea, brandy, egg, Bengel's food, etc., which were well retained. The vagina was syringed out regularly, and the discharge remained healthy.

On the evening of the 8th, I found her worse. Delirium and restlessness had set in and continued until her death, which occurred at 6 o'clock P.M. on December 9th, the sixth day after operation.

On removing the dressings after death, I found the wound in the abdomen healed, and not a drop of pus was observed. There was gaping between two of the sutures, but this was evidently caused by her restlessness before death, when she could only with difficulty be restrained from tearing off the dressings. I got permission only to reopen the abdominal wound, so that the examination was very limited, and it was also, under the circumstances, hurried. I found the stomach and intestines much distended with flatus. There was marked peritonitis with adhesions, which probably arose on the day after the operation. The uterus was forced down by the distended intestines, was well contracted, and there appeared complete union of the uterine wound. There was no blood or effusion in the abdominal cavity.

REMARKS.—As she got over the period of collapse, and escaped the second great danger (namely, septicæmia), hopes were entertained of recovery. The cause of death was peritonitis, and I may call attention to the obscurity or "latency" of the symptoms. Except for two or three hours she scarcely suffered any pain; her temperature was never above 99.4°. The most marked symptom was the accelerated pulse, gradually increasing in rapidity and weakness, which might have been an indication of exhaustion or prolonged collapse, independent of peritonitis, taking into consideration her enfeebled condition at the time of operation. Notwithstanding the unfavourable result to the mother, the case seems to me of interest not on account of anything novel in the performance of the operation, or, unfortunately, in the result, but from the nature and rarity of the deformity necessitating the operation.

There can be no doubt of this being a case of *mollities ossium*. The pelvis was characteristic of this deformity and contraction. The nature of the outlet has been already described, and from the slight *post-mortem* examination made I found irregularity and deformity of the brim corresponding to the outlet, although not to such an extreme extent. The iliac and pubic bones were pressed inwards, narrowing the cavity of the pelvis transversely, and the vertebral column had sunk into the pelvis, and overhung the brim.

I regret very much not having had the advantage of a complete *post-mortem* examination so as to have taken measurements.

The case is of interest in several respects. 1. The rarity of the disease in this country. In the north of Ireland, at least, I believe it to be exceedingly rare. 2. The extreme degree of the deformity; and, 3, the complete ossification of the previously softened bones, and, as a consequence, the absolute necessity of the operation performed. Spiegelberg says, "It is extremely rare for complete recovery to take place, or for the pelvis again to become ossified." Barnes, in describing his new method of embryotomy designed "to effect delivery in extreme cases of pelvic contraction," where Cæsarean section was previously considered the only resource, and defining the cases suitable for it, says: "Where two fingers can barely pass between the tuberosities of the ischia, there will be insufficient room for manipulation, and it will be scarcely possible to guide the *écraseur* through the pelvis." "But in these cases," he adds, "the bones will often open up under pressure applied from within." Again, Spiegelberg says: "That most of such pelves are dilatable, and labours *per vias naturales* have become more common. Casati asserts that he has almost always found the osteo-malacic pelvis (which is so common in Milan) to be dilatable, and has extremely rarely been obliged to resort to Cæsarean section, only in two out of forty-one cases." These quotations show how rare it is for complete ossification to take place. Even if the head had entered the pelvis in this case, which it could not do, delivery would have been equally impossible, as the bones at the outlet were absolutely rigid and unyielding. This was easily tested on account of the close approximation of the ischia, where the slightest yielding could have been detected. No doubt the complete consolidation of the bones was promoted by the long freedom from child bearing. The morbid process which deprived the bones of their calcareous matter had ceased to progress, and they, in the course of time, had become re-ossified.

As regards the etiology of the disease, about which so little is known, I may mention that my patient attributed her illness to a damp, cold, and badly lighted house. So convinced was she of this fact that, as soon as she was able, she removed to another and drier house, after which she stated she improved much more rapidly. No doubt this may have been the exciting cause, under the lowering influences of the puerperal state, in a constitution delicate at the best.

ON THE HISTOLOGY OF A CASE OF SO-CALLED "DUCT CANCER."

By ARTHUR E. BARKER, F.R.C.S.,
Surgeon to University College Hospital, etc.

THE patient from whose breast I have made these microscopic sections and drawings was a lady, aged 52, of healthy appearance but spare figure. Her attention was first drawn to her right breast some three years before she first came under observation, by a slight serous discharge from the nipple; this had continued ever since. For about a week before I first saw her, on February 4th, 1889, this discharge had been tinged with blood. On examination of the breast I found it very much atrophied and scantily furnished with fat. The nipple was puckered at one side and hard at the base, but little if at all retracted. The skin over the breast, was in no way affected except by a trace of puckering at one spot on being pinched. There was a distinct hard nodule the size of a filbert, just above and to the inside of the base of the nipple, and another in the substance of the breast close to it. Manipulation of these knots caused an escape of bloody serum from the nipple. This fluid contained many large round corpuscles undergoing fatty change and also red corpuscles (Plate I, c & d). The former (c) were many times larger than the latter (d). There had been no pain in the breast until recently, and at the moment of examination it was said to be quite absent. The glands in the axilla were markedly knotty, but not enlarged, and were freely movable.

There was no history of abscess in the breast, nor of any injury except a severe bite of the nipple twenty-two years ago during nursing. The part is described as having been nearly bitten off, and the irregularity at its base has always been attributed, and probably correctly, to this accident.

In view of all the facts of the case, I concluded that this was an instance of so-called "duct cancer," and thus described it to the patient's son who was the medical man who had brought the patient for consultation.

On February 7th, 1889, I removed the organ and the axillary glands in one continuous strip, cutting the skin widely. Convalescence was rapid; the wound healed everywhere by first intention, and the patient left the Nursing Home for her own house on the fifteenth day.

The examination of the breast turned out to be very interesting. My first section through the centre of the nipple and adjacent gland in the fresh state with a knife showed the ducts for the last inch or so of their course to be largely dilated as far as the base of the nipple. One which lay in the direct line of section was as large as a small goose quill. Its interior looked irregular, and like a varicose vein laid open (Plate I, a).

Plate I.—Section through centre of nipple of right breast, showing dilated ducts and a duct papilloma projecting into one of them. Drawn from fresh specimen. (Natural size.) (a) Dilated duct, (b) papilloma, (c) skin, (f) nipple, (g) breast tissue, (c) large granular corpuscles, (d) red blood cells in sanious discharge from nipple.

The corpuscles figured above were suspended in the sanious fluid which escaped from the nipple for three years preceding operation. There was blood only for a week previously. The relative size of these corpuscles and the red blood cells is well seen.

Plate II.—Vertical section through the large raspberry-like papilloma of Plate I. It is seen to be made up of four main lobes springing from a stem which is rooted in the duct wall. Each of the lobes can be seen to be broken up into smaller leaflets. (Natural size.)

The next thing noticed was a bright red, raspberry-like papilloma, about the size of a pea, projecting into the lumen of this largest duct from one of smaller size at a point about one inch from the surface of the nipple (Plate I, b). When I had made this drawing of the growth and its surroundings in the fresh state, the breast was hardened for microscopic examination. My first care was to determine the nature and relations of the soft papilloma. The sections which passed through its centre vertically showed it to the naked eye to be perfectly treelike in shape (Plate II, natural size), having a slender stem and many branches. The root was attached to the wall of the duct. Under the microscope, I found this papilloma to consist of a delicate strand of highly differentiated, almost non-nucleated, connective tissue, containing vessels of various sizes (Plate III, d d), and covered with a multiple or single layer of cuboid cells, tending in places to the columnar form. With the naked eye the papilloma (Plate II, natural size) can be made out to consist of four primary divisions spread out from the parent stem like the branches of an elm tree. The surfaces of each of these divisions or lobes when magnified are seen to be covered by a layer of low or tall cuboid cells, in parts quite columnar. These cells have in the section mostly fallen off the exposed surfaces of the primary lobes, leaving the fibrous substratum bare, but can be traced over the outlines of each where they are in contact one with another (Plate III, g g; Plate IV, a a). Each of these primary divisions of the growth is composed of secondary lobules (best seen in the less exposed parts), and these again of tertiary leaflets. All of these have essentially the same structure, but the cells which cover the smaller divisions are most distinctly columnar, being often very tall (Plate III, a). Each cell, if in single file, is attached to the fibrous substratum by its narrow end, the other being quite flat

on the free surface. The single nuclei have nothing remarkable about them.

But besides these secondary and tertiary papillary outgrowths on the surfaces of the lobes of the main growths, each of the latter contains in its interior a number of spaces, of varying size and generally oval shape, separated one from the other by strands of the fibrous stroma, running for the most part in the direction

Plate III.—Vertical section of portions of two secondary leaflets of the large raspberry-like papilloma, showing a small tertiary papillary growth (a) springing from the fundus of the cleft between the two leaflets. Its structure is identical with that of the larger divisions of the papilloma. In its centre a small open cavity is seen corresponding with the large loculi (c c), fully formed in the fibrous stroma (b b) of the larger leaflets. Both the surfaces of the secondary and tertiary papillary formations and the loculi in their interior are lined with columnar epithelial cells. (d d) Capillary vessels running in the fibrous stroma of the papillary leaflets, and following the direction of their axes. (g g) Epithelial covering of two adjacent lobes of the first papilloma, forming the lining of a deep hollow between them, from the bottom of which springs the smaller papillary growth. (Low power. Hartnack, obj. 4, oc. 3 x 90.)

of the long axis of the lobe (Plate III, b b). These spaces are lined everywhere by irregularly columnar cells (Plate III, c c), in single or double layers, and into the larger spaces project again lobulated papillary growths (Plate III, a) of precisely the same structure as those already described. In some parts of the bodies of the lobes the stroma is so broken up by these spaces as to give the whole field an alveolar appearance, and as the epithelial cells in these alveoli are often irregular in shape, the resemblance to some forms of scirrhous is very close (Fig. IV). Whether each of these alveoli represents a section of a complete oval space in the stroma or only the bottom of a depression between adjacent lobules running at right angles to the plane of section I am unable to say, but the latter explanation appears at all events a possible one in view of the apparent branching in every direction of the lobules.

Coming now to the parts of the breast subjacent to the papilloma just described, I found nothing abnormal in the larger ducts either in the fresh state by the naked eye, or subsequently by the microscope. But in some of the smaller ducts a condition represented in Plate V is seen, which I think explains in a mea-

sure the mode of origin of the larger papillomata of the ducts. This change in the latter consists in a fairly regular outgrowth from the inner surfaces of the duct of projections covered by epithelium, which, on section, leaves little doubt that they are growths similar to the larger one just described, but at a much earlier stage of development. These projections consist of a central fibrous strand, covered by a double or treble layer of low columnar or cuboid cells. Some of these projections are simple spurs

Plate IV.—Vertical section through the body of one of the lobes of the raspberry-like duct papilloma showing the fibrous stroma split up into bands enclosing loculi filled with epithelial cells of varying size and shape. The whole section has a considerable resemblance to a section of scirrhous. The surfaces of the lobe are seen to be covered with columnar epithelium, *a a*. (High power.)

(Plate V *a*); some are commencing to branch (Fig. V *b*). The possibility of their being simply folds or wrinkles in the wall of the ducts, produced by shrinking of the fibrous tissue around had to be considered; but this seems to be negatived by the fact that the central folds of fibrous tissue in them do not appear to be folded, but to spring out from the duct wall, and to belong to the papillary growth itself. Also the commencement of branching in the growths is against this view. Again, many of the ducts close by do not present this appearance, but are quite smooth and free from wrinkles, although the fibrous tissue around them appears quite as dense and shrunken as in the case of the ducts which do show these papillomata. Their whole appearance, too, is that of definite outgrowths; and as we have a large macroscopic papilloma close by, growing obviously from the wall of a duct, and presenting the same general structure, it is, I think, safe to conclude that the smaller eminences are but forerunners of the larger.

Other deviations from the normal in the breast I am unable to detect either with the naked eye or the microscope. The superabundance of fibrous tissue met with can be accounted for by the advanced state of senile atrophy of the gland. In a few spots there were groups of leucocytes among the strands of fibrous tissue, but this is probably nothing out of the ordinary. There are certainly groups of epithelial cells imbedded here and there in the fibrous tissue surrounding the greater ducts; but, from their regular arrangement and general appearance, I think they must be regarded as remains of the atrophied acini rather than as of the nature of neoplasms. They are usually arranged in round, well-defined spaces, containing in their lumen, in many cases, a coagulated albuminous material.

The exact position which these duct papillomata are to occupy in the classification of tumours of the breast remains yet, I take it, to be determined. That the condition with which they are associated has been rightly called "duct cancer" provisionally, the history of many cases proves; and, among others, those recorded by Mr. Pollard and Mr. Bowlby deserve special notice. But the exact relation of the neoplasms to the other better known growths remains to be elucidated. In some respects they partake of the characters of scirrhous, as, for instance, in their tendency to infect the axillary glands, in their liability to recurrence after removal, and in some of their microscopic characters. The object of this paper, however, is rather to set forth the histological characters of these changes which this

case gave me an exceptionally good opportunity of studying than to attempt to explain their causation. When all the histological

Plate V.—Transverse section of a small duct close to that containing the raspberry-like papilloma. Shows the whole inner surface covered with papillary growths, some single (*a a*), some commencing to branch (*b b*); (*c c*), groups of fat cells; (*d d*) fibrous wall of duct. (Low power. Hartnack obj. 4 oc. 3 x 90.)

details are fully known we shall be in a better position to give these growths their proper place and nomenclature, and investigate their actual causation.

SOME PRACTICAL POINTS IN THE TREATMENT OF RETENTION OF URINE.¹

By G. BUCKSTON BROWNE, M.R.C.S.

In selecting retention of urine as the subject of the paper which your secretary, Dr. Henty, has honoured me by asking me to read before you to-night I proposed to myself no systematic essay, for I have already written that in the pages of Mr. Christopher Heath's *Dictionary of Practical Surgery*, but rather to touch upon certain points upon which there may well be differences of opinion, to refer to recent advances made by surgery in this department, and, while detailing some of the personal experiences of sixteen years, to elicit the opinions and practice of others.

I propose to discuss retention of urine caused by stricture of the urethra, and by prostatic enlargement, with special reference to instrumentation, hæmorrhage, fever, drainage of the bladder, and excision of the prostate.

When a man under fifty years of age finds he cannot pass any urine it is almost certainly due to urethral stricture. If this is the case there will usually be a history of difficulty in passing water and of a small stream, and often a history of previous instrumentation, all of which enable the surgeon to arrive at an accurate diagnosis. If the case is not one of advanced disease a small English gum catheter, or a small olivary catheter, will often pass with ease and relieve the patient. These instruments are

¹ Read before a meeting of the North London District of the Metropolitan Counties Branch, held at Tottenham.