such useless individuals, about whose fate no one exhibits any inconvenient curiosity!

Again one need not be surprised to find in the distant islands of the Pacific a healthy native population. They live much in the open air, in an atmosphere practically free from pathogenic germs, so long as contamination from without does not reach them; but the very disastrous results of imported disease, such as small-pox, measles, syphilis, etc., are notorious, and one can easily believe that the advent of cancer-bearing individuals would be followed by the spread of this disease also.

ETHNOLOGICAL.

The freedom of certain peoples from cancer does not appear to be due to individual immunity, but to the accident of locality and environment, and the mode of life. Under favourable conditions any one may become a victim to cancer.

There is a popular belief that Jews as a race are remarkably exempt from cancer, but this belief is quite erroneous, as is shown by cancer statistics. One reason alleged for this is that Jews, generally speaking, have a great repugnance to become inmates of hospitals where Gentiles are in attendance, and thus few cases are found in these institutions. Private practitioners do not find that Jews exhibit any immunity from cancer in general. The male Jew may unquestionably claim perfect immunity from one form of cancer which his Gentile brother may suffer from, but apart of this he is equally vulnerable and liable.

MICROBES IN CANCER.

Dr. Brand then passed briefly in review the statements of Schreulen and Doyen as to the existence of microbes in cancer.

HEREDITY.

With regard to heredity, he observed that the children of cancerous parents might possibly acquire more or less vulnerability congenitally, as in the analogous case of tubercle, but that it was most improbable that the disease itself could be transmitted. The occurrence of cancer in several members of a family after the death of parents from that disease could not be accepted as evidence of heredity; but, on the contrary, could and ought to be accepted as evidence of infection from an obvious source.

TREATMENT.

He concluded his address by a brief reference to the question of treatment. With present knowledge he said this was limited to removal of the tumour, if accessible, at the earliest possible moment; but he pointed out that if an infectious origin, almost certainly bacterial, were established, the lines on which treatment should be carried out would become clearly defined. Syphilis was long treated empirically. The treatment was still the same, but it was no longer empiric, for the bacillus of Lustgarten was overcome by two of the most powerful bactericides known; and for cancer an equally efficacious bactericide might be found, or it might be that serumtherapy would prove effectual. Moreover, even now there was reason to hope for good results from the use of electrical currents of high potential or the Roentgen rays.

As regards prophylaxis, much might be hoped for from notification, improved sanitation, including disinfection of houses, cremation of bodies, destruction of dejecta, dressings, etc., by fire, the use of pure drinking water, scrupulous personal cleanliness, especially the avoidance of unwashed hands when food was taken; the use of the Turkish bath, exercise, moderation in diet, abstention from alcohol in excess, and general observance of the known laws of health.

STAFFORDSHIRE BRANCH.

SOME CLINICAL CASES.

By WHEELTON HIND, M.D., B.S.LOND., F.R.C.S.ENG.,
President of the Branch; Surgeon, North Staffordshire Infirmary and Eye Institution.

DISEASES OF THE URACHUS AND UMBILICUS.

[AFTER some introductory remarks the President said:]

I do not know that I have anywhere seen any description of the diseases of the urachus, but at least 4 cases representing

different ailments of this more or less obliterated tube have come to me. The urachus is constantly seen and occasionally divided in the operation of median laparotomy without any untoward results, but I always avoid it if possible.

CASE I.—In a male child the umbilical cord did not separate very speedily, and at 5 weeks old the umbilicus began to weep, and in a few hours it exuded fluid copiously. As this fluid increased the amount of urine passed by the urethra diminished, and an examination of the fluid coming from the umbilicus showed it to be urine. Extravasation took place around the umbilicus, the skin became red, and the tissues swollen and boggy. The temperature ran up and the child became very ill; the extravasation spread rapidly all over the abdomen, and the case terminated fatally in a few days.

There was in this case no doubt a patent urachus connecting the bladder with the umbilicus. The urinary bladder of mammals is formed by a dilatation of the pedicle of the allantois. The urachus, which is the tubular extension of the walls of the bladder through the umbilicus, generally shrivels and becomes a solid cord, but at times retains its tubular form. It generally does not in the human subject pass beyond the umbilicus, but probably in this case a portion of the tube was ligatured in the cord. Unfortunately obliteration did not occur, and in time the cicatrix broke down. It occurred to me that as the tube was of greater calibre than the small male urethra, contraction of the bladder forced the urine rather along the urachus than the urethra. This case happened many years ago. If the same thing occurred again I should not hesitate to cut down and obliterate the urachus, though with extravasation, infection of the peritoneum would be very apt to occur; expectant treatment seems to give no hope whatever.

CASE II.—A girl, aged 6 years, complained of pain in the abdomen half way between the umbilicus and pubes. There was a muco-purulent discharge from the umbilicus, and an elongated fusiform lump, exquisitely tender, behind and between the recti muscles. A probe passed downwards behind the recti for about 1½ in. Next morning there was a discharge of creamy pus from the umbilicus, and diminution of the pain and swelling. Pressure over the swelling caused pus to well up at the umbilicus. The wound was suitably dressed and in a few days got well, and there have been no symptoms since.

This was evidently an abscess in the patent upper part of the urachus, infection probably having taken place through the umbilicus. Knowing the proximity of the urachus to the peritoneum, I had arranged to cut down on the abscess that there might be no danger of its bursting internally; but fortunately it discharged externally, and the inflammation evidently effected a cure by obliterating the tube.

CASE III.—A girl, aged 4, was brought for a chronic discharge from the navel and acute paroxysmal pain below the umbilicus. A careful examination revealed no tumour, but the parents said that the child's sufferings were such that her life was unbearable. A probe passed through the umbilicus passed downwards for some distance. Thinking that there was some occasional occlusion of the tube and retention of its contents, and that the pain might be due to this cause, I passed a probe and cut down on the urachus. It was patent up to the apex of the bladder, and there may have been a small communication with that organ. I ligatured the urachus, treating it as in removal of the appendix, and stitched up the wound in layers as after laparotomy. The peritoneum was accidentally opened, but no ill resulted. Convalescence was retarded by the irritation of a stitch in the muscular layer, which was subsequently removed. The child went out quite free from her old pain and discharge.

CASE IV.—A gentleman of middle age began to complain of irritability of the bladder and discomfort when jolted. The bladder was sounded and found to be free from stone, and the urine was acid and normal in quality. He was seen by an eminent London surgeon who makes the urinary organs his speciality, and was told he had gout, and was dieted and drugged without any result. A few days later he began to complain of a fixed pain above the pubes, and I was asked to see him. I found an area of dullness immediately above the pubes, evidently below the recti muscles, pressure on which caused pain and a desire to micturate. I suggested that this was a patch of cellulitis, and that probably an abscess would form, which had better be attacked surgically if there were any signs of extension. Within a few hours the patient complained of feeling something give way, and passed a quantity of pus in his urine. The bladder was washed out at intervals, and the pain and swelling soon disappeared. No cystitis resulted, the whole trouble rapidly cleared up, and the patient has had no return of symptoms for the last three years.

I believe this case must have been due to abscess formation in a patent portion of the urachus. It is difficult otherwise to account for the origin of the abscess, in the absence of any history of injury or previous bladder trouble. I think it may also be taken for granted, from the absence of odour, that the bacillus coli communis was absent, and that therefore the abscess was not connected with intestine.

Most practitioners have seen the little papillomatous growths that occasionally rise from the umbilicus. I am not aware whether it has been shown that these have any connexion with the urachus, but occasionally these growths have a small canal which secretes moisture. Treatment consists in removal by avulsion or ligature and gentle cauterization of

the base. Granulations at the umbilicus are not, however, always of a simple character, as the following case will show:

CASE V.—A boy, aged 4 years, was brought for trouble above the umbilicus. There was a secretion, and moist red granulations. These were removed and cauterized, but soon returned, and I was asked to adopt more radical measures. A probe passed directly backwards for some 2 in. to 3 in. I enlarged the opening by incision, and some grumous material came away. My finger entered a cavity formed by matted intestines covered by small tubercles, some of which were caseating. The case was one of tuberculous peritonitis, without fluid. The cavity did not appear to be absolutely shut off from the general peritoneum, so I felt it unwise to do much, but I swabbed out the cavity as well as I could with a limited opening, and left in a strip of gauze for drainage. Contrary to my expectation the case has done well, and made a good recovery.

It is probable that tuberculous infection of the umbilicus takes place from within. I have seen malignant disease of the omentum spread to and form a fistula through the umbilicus, but this condition of things must be rare. It is a little more common to find secondary deposits of malignant growth round the umbilicus. I recollect one case where the diagnosis of malignant disease of the liver was clinched in a early stage by the presence of a hard ring of growth about the umbilicus, before the growth itself could be felt.

CASE VI.—Another case of malignant affection of the umbilicus occurred in a case in which I had removed a large ovarian cyst with much intracystic growth two years before. The patient returned with a discharge from the umbilicus and an abdominal tumour, largely filling the pelvis, but not cystic. Exploration showed hundreds of little growths all over the peritoneal surface of the intestines and parietes and thick masses in the omentum and pelvis. Removal was impossible, but I explored the umbilicus from within, and, curiously enough, nothing was adherent to it. The peritoneum formed a normal dimple, and was not thickened or affected in the neighbourhood, but that infection was probably secondary to growths in the liver.

At times a very troublesome amount of ulceration occurs on the surface of large umbilical herniae, quite apart and independent of intertrigo. Knowing the thinness of the sac of an umbilical hernia, and the pressure on its walls during exertion, I have been afraid in cases of ulceration that the sac might rupture, but I have never met with this accident. These ulcers are very troublesome to treat; the hernia is generally irreducible, and friction by the clothes is with great difficulty avoided, while the tension of the sac and the small blood supply of the skin hinder any tendency to cicatrization.

OCCLUSION OF SALIVARY DUCTS.

I have lately seen 5 cases of what I take to be a rather rare condition, that is, unilateral enlargement of the parotid due to temporary or permanent swelling of the duct in the mouth. The symptoms are very characteristic, an elastic painful circumscribed swelling of the whole parotid gland, with a history of increased size and pain during and after meals, and generally some decrease during digestion. The onset has in all cases been sudden, and curiously enough all the cases were on the left side, and I have not been able to get a history of stomatitis as a predisposing cause in any of them. Two cases got well spontaneously, one after catheterization of the duct, and one required an operation, the orifice of the duct having been occluded. I used Bowman's canaliculus probes to dilate the duct, and in the last case cut across the duct, forming a permanent fistula where the duct crosses the gum.

Blocking of the ducts of the submaxillary gland occasionally follows cicatrization of the floor of the mouth after removal of the anterior part of the tongue for cancer, and gives rise to the fear that some of the lymphatic glands have become affected. It has happened to me that this enlargement has induced me to operate for supposed secondary growths, with the result that I found only a hypertrophied submaxillary gland, which was demonstrated to be free from infection.

The presence of a salivary calculus in the duct may cause a swelling of the gland itself, more noticeable during meals. This must be, I think, rather a rare trouble, for I have only seen four cases in eighteen years; two presented unusual symptoms, both being sent to me as cases of malignant disease of the floor of the mouth. Both cases were in adult males.

In the first case the patient complained of an ulcerated swelling below the tongue, a good deal of thickening in the tissues, fetor, and a discharge. The finger detected some hard gritty substance, and an elongated calculus about ½ in. long was easily removed by forceps. The centre of this calculus was a bony stalk, round which the lime and tartar had become deposited. When the man was shown the cause of his trouble he at once recollected pricking himself when chewing a grass stalk, and having a sore mouth afterwards. The stalk evidently slipped into the duct, and gave rise to the subsequent trouble.

In the second case the condition looked like a malignant growth. There was a very hard tumour below the tongue on the left side, about the size of a walnut, and apparently an enlarged gland at the angle of the jaw; but the finger felt the mucous membrane move over the tumour, and careful questioning elicited the fact that the enlarged gland was always bigger during meals and went down somewhat between them. The diagnosis was clinched by a drop of cocaine and a bare lip pin which sounded the stone through the mucous membrane. Removal was comparatively easy.

Another example of the tendency of foreign bodies to slip into ducts occurred to me twice, when the cause of conjunctival irritability was found to be the presence of an eyelash in the inferior puncta lachrymalis.

INJURIES OF NERVES.

It has happened to me to have 8 cases of injury to large nerves necessitating operation; 2 have been shown at meetings of the Branch; 4 cases were due to injury by direct violence either by the ends of broken bones, or by the accident producing the fracture: in 2 the median and in 2 the musculo-spiral nerves were implicated. The other 4 cases were due to incision by a sharp instrument.

The musculo-spiral nerve, from its proximity to the shaft of the humerus and its course round the bone, is peculiarly liable to damage either by a blow or injury from a fractured bone. I believe that there is little or no danger of the nerve becoming involved in callus unless it has been injured itself. The median nerve does not seem prone to injury in fracture, and from its position I should not expect in a longer series of cases to find it injured with anything like the frequency of the musculo-spiral.

The damage to a nerve is generally not apparent till after the splints are removed, when a certain amount of paresis or wasting of special groups of muscles may be observed. In case of injury to the median nerve, the most important sign is the trophic change which takes place in the skin of the phalanges, and loss of sensation.

My first case was that of fracture of both bones of the forearm by becoming caught in a travelling belt. Nothing was noticed until six weeks later, when splints were removed, when it was found that there was marked paralysis of the hand, and that the skin over the second and distal phalanges of the thumb, first, second, and third fingers was becoming hard and scaly, sensation being lost. It was at once apparent that the median nerve was damaged, and I cut down on it, and found that the deep layer of flexor muscles had been perforated by a sharp piece of bone, which had caught the nerve and twisted it down below the flexor profundus, where it was firmly attached to the surface of the bone. It was freed and brought up to its place. The case resulted in a rapid cure.

The second case was that of a lad who fell from a window, fracturing the humerus about its centre, and the radius and ulna of the same side. I put the arm up myself, and noted nothing which called my attention to the median nerve. When splints were removed it was noticed that the hand was weak, but marked trophic changes were present on the middle and distal phalanges of the thumb, index, middle, and ring fingers. I cut down on the median nerve in the forearm, choosing this situation because, although it was possible that this nerve might have been implicated in the upper arm, the long flexors were working well and not atrophied. The median nerve was found, partially divided, the upper portion partially bulbous and bound to the bone (radius) by cicatricial tissue. The nerve was freed and partially resected, and the case gave no further trouble.

The musculo-spiral cases were fairly simple, one being due to a blow which crushed the nerve against the bone, the other to injury and fracture. I regret to say that I have lost trace of one of these cases and am not sure of the result, but as he has not returned for advice I hope he is cured. In three of the cases of injury by incision, by a knife or the sharp edge of pottery, the median was involved at the wrist, and in one the ulna, in its groove immediately behind the elbow. One case of injury of the median nerve was operated upon a few hours after the accident, all the tendons being sutured at the same time, with a very successful result. The others were operated upon some weeks after the accident. In one partial division of the nerve was found, with a bulbous enlargement of the proximal end. Partial resection and suture resulted in complete cure. The symptoms complained of in this case were chiefly trophic changes in the skin and loss of sensation.

The other case was more hopeless, as the wound had suppurated, and the flexor tendons had sloughed, but the ends of the nerve were found, resected and sutured, with the result that the small muscles of the hand supplied by the median were restored, sensation returned in the thumb and three fingers, and trophic changes in the skin ceased, so that as far as the nerve was concerned the result was perfect. The case of injury to the ulnar nerve was only operated upon a few weeks ago.

When I saw the case there were two cicatrices, one over the ulnar groove by the side of the olecranon, the other on the ulnar side of the anterior surface of the forearm, about 3 in. below the elbow. From the position of the latter I thought it most probable that the nerve was damaged in the ulnar groove and cut down on it there. It had evidently been divided, and the ends were united by scar tissue, the upper end was hypertrophied and bulbous, the lower end atrophied. A complete resection of the scar tissues was made, and the ends of the nerve adjusted by sutures. In two days there was tingling in the fingers supplied by the ulna, and sensation slowly returned. I regret that this lad has not presented himself for examination since he left hospital, and I can say no more about his present condition, but I have no doubt that he will make a perfect recovery.

ABDOMINAL INJURIES.

I think a short account of some injuries to the abdomen may be interesting, as the cases I am going to quote illustrate what I take to be somewhat rare conditions.

A man was crushed between wagons on December 6th, 1901. No distinct physical signs of injury were found; there was no blood in the motions or urine, no sickness, and the bowels were moved before he was taken into the ward. There was a great deal of shock; he allowed the abdomen to be manipulated, but complained of pain. The chief symptoms for the next few days were shock, pain, and constipation, but there was no peritonitis or sign of definite lesion. The bowels were moved only after enema or aperients. On January 3rd, 1902, after five days' constipation, the bowels were moved and the man had a rigor, and on January 10th, after four days' constipation, another rigor. On February 10th he vomited, but the abdominal symptoms remained unaltered. A week later he began to be troubled with diarrhoea, and wasted rapidly and sank on April 15th, somewhat over four months from the date of accident. *Post mortem* a very curious condition was found. There was a general absence of all fat. In the right side of the pelvis a coil of small intestine was bound down and adherent to the bladder and surrounding tissues. On separating this a large cavity containing thin purulent fluid was found, and perforating the adherent wall of intestine was a fish bone; several other small bones were found in the abscess cavity.

There was evidently some damage to a coil of intestine, and it is possible that the fish bones were then passing through that portion of the gut and injured it, or it may be that bones were swallowed some time after the injury, and were retained in the damaged portion of gut, and set up ulceration, as he was put on fish diet on December 20th. I incline to the first view, as the bone which caused the damage was about 1½ in. long, and I doubt whether an invalid would bolt food with bones of this size in it. This case recalls to me one which was admitted into the North Staffordshire Infirmary several years ago under Mr. Spanton.

The man complained of having received an injury, and was admitted for symptoms of peritoneal abscess. On incision offensive pus was let out, and lying in the abscess cavity was the premolar tooth of a pig. The case did well, and the man said he remembered swallowing the tooth while eating brawn some days previously.

What was the connexion between the accident and the tooth? Did a crush just catch the portion of bowel through which the tooth happened to be passing, setting up perforation and abscess?

A man trod on the head of a pick, causing the handle to fly up and strike him in the abdomen. He complained of pain, but allowed manipulation, passed flatus, and did not vomit. His tongue was clean, and his general appearance so good that I hoped we were only dealing with a contusion. He was carefully watched, and two days after the accident there were marked signs of peritonitis. Median laparotomy was done, and the peritoneal cavity found full of faeces. It was washed out, and the rupture sought for. The colon was found to be completely divided at the hepatic flexure.

It might have been expected that such a dangerous injury would have been indicated by no uncertain signs, but it is not so, and lives are lost in consequence, the absence of symptoms lulls the surgeon into inaction; but, on the other hand, no one would dream of opening every case of contusion of the abdomen.

INJURIES OF THE PANCREAS.

The two following cases are examples of injury of the pancreas, with extravasation of its secretion:

A man was crushed between buffers which resulted after a month in an enlarged abdomen. The man noticed a swelling in the epigastrium and left hypochondrium five days before admission. He looked well, but complained of pain, and occasional vomiting. The tumour fluctuated, was evidently cystic, and reached to the level of the umbilicus. Abdominal section was done, and the cyst was found to be retroperitoneal. The stomach was pushed up, and the cyst opened, and a large quantity of straw-coloured alkaline fluid evacuated. On exploring the cavity of the cyst the finger came down on the abdominal aorta and vena cava, and the bodies of the vertebrae. The cyst was stitched to the abdominal wall and drained. I noticed a peculiar soapiness of the hands after operation, and at once recognized pancreatic digestion. The fluid was afterwards found to convert egg albumen into peptone. The case did well, but there was marked digestion of the skin round the wound, and the discharge of fluid was noticed to be profuse after food. The cavity contracted gradually, and the patient left the hospital well four weeks after operation.

Evidently this was a case of injury to the pancreas or its ducts, and the formation of a cyst containing pure pancreatic

fluid. It is interesting to note that the fluid had no digestive power on the cyst wall.

This case leads up to another which I saw with Dr. J. W. Dawes.

A middle-aged lady was taken suddenly ill soon after dinner with most acute pains in the left hypogastrium, vomiting, and collapse. The case was looked upon as a suspicious one of perforating gastric ulcer. Two days after the vomiting still continued, and as no flatus or motion had passed the question of obstruction and operation for its relief arose. It was then I saw her. The patient was evidently very seriously ill, but the abdominal muscles were working well, and I felt that some viscus had given way behind the peritoneum, and that some local peritonitis was causing temporary obstruction. There was dullness and resistance in the left hypochondrium, and I suggested postponing operative measures until an abscess formed. Curiously enough, before we left the house, a motion was passed, and from that time the bowels acted freely. The temperature ran high, and kept high for many weeks. On the fourth day patient was still vomiting, but the bowels were open and flatus passing. She was still in pain. Ten days after the onset there was marked fluctuation in the left flank, and an exploratory operation was undertaken. The abscess was found to be post-peritoneal and to extend deeply inwards towards the bodies of the vertebrae, downwards and upwards. The discharge contained no gas, did not smell very much, and consisted of a thin fluid with flakes of purulent matter, sloughs, and broken-down debris. Free drainage was ensured by deep and large tubes. The high temperature was hardly affected by the evacuation of the abscess, and there was still gastric trouble and a tendency to vomit. During the next few days large sloughs came away and much broken down tissue, and there was a large amount of discharge. The wound did not look well, and the skin all round was evidently digested. It then became obvious that the discharge was digesting and destroying the tissues. Some was collected, and it was found to be pancreatic fluid. This we had surmised because the secretion was not acid and there was no gas or food debris, as would have been the case if there had been a communication between stomach and the abscess cavity. It was then noticed that the amount of discharge increased largely after and during digestion. To stop secretion of pancreatic fluid the patient was fed entirely by the rectum for about a fortnight, which was as long as was possible owing to her weak state. The wound had made considerable progress, and the discharge was much less and the skin became less irritable during the period of rectal feeding; improvement stopped when physiological digestion began again. But by alternate periods of rectal and gastric feeding the wound steadily progressed, and after a protracted illness the wound healed soundly and the patient got completely well.

When the results of the operation on the late President McKinley were published, and it was known that the cause of death was gangrene of the wound, it struck me, from the experience of the last case, that the so-called gangrene was due to pancreatic digestion, for it appears that this organ had been wounded by the bullet. There must, therefore, have been an extravasation of pancreatic fluid which my case proves to be a potent cause of necrosis and sloughing. Indeed, digestion of tissues must go on until they attain an immunity to pancreatic digestion such as the gland, its ducts, and the small intestines possess.

As long as the bullet wound in the pancreas was open pancreatic fluid would pass along its tract and act on all tissues it came in contact with, and I take it the recent wound, which was closed with stitches, would rapidly take on an unhealthy action, and have even less resistance than normal tissues.

I have met with a similar digestion of skin after gastrotomy, especially if the opening be made so large that there is a constant leakage of gastric contents. I have also seen the peritoneal surfaces show marked signs of digestion in perforated gastric ulcers. The fact that wounds of the stomach and pancreas do heal shows that the new cicatrices do acquire immunity to digestion, an immunity seemingly possessed by the surfaces of chronic ulcers of the stomach.

ACUTE ORCHITIS.

Judging from my experience acute orchitis must be a very rare complaint, but I have seen two well-marked cases, and the clinical symptoms are very characteristic, and cases of this disease should never be mistaken for epididymitis, which is the more common form of swelled testis.

The causation is very obscure; the condition may be due to a blow, or possibly to some twist or obstruction to the blood vessels in the cord.

The onset is acute, with pain, vomiting, and rapid swelling, which attains a large size, much larger than in epididymitis, and the body only of the testis is affected. There is no urethral discharge, and I suspect the affection to be one which affects males in early life.

The pain only lasts a few days, and then the organ begins to decrease, and the testis generally atrophies, leaving a small, hard nodule attached to the epididymis.

My first case was a schoolboy, aged 16, who had been kicked from behind on the left testis two days previously. He went to bed well, but

had to get up and go to the sick ward, as pain came on acutely with swelling, and he vomited.

The second case occurred in a lad of 20, who gave no history of injury. Clinically the case presented the same course as the former, and the result was extreme atrophy of the testis.

The treatment adopted in both cases was rest and support of the organ and hot fomentations, but in future, remembering the resulting atrophy, I shall strongly urge subcutaneous incision into the tunica albuginea to relieve pressure, and to prevent permanent damage to the organ.

VESICAL CALCULUS.

It think there is very little doubt that cases of stone in the bladder are gradually becoming rarer in this district. Looking through the annual reports of the North Staffordshire Infirmary one cannot help being struck by this fact, and the diminution seems to obtain for both young boys and old men, the two extremes of life when vesical stone is most common.

A gradual change, too, has taken place in the method of operation which my colleagues and I have adopted. Ten to fifteen years ago cases were treated by lateral or median lithotomy, or the crushing operation with evacuation in one sitting, but gradually the operation of suprapubic lithotomy has been adopted for all cases and now holds the field. It is easy to perform, permits of a thorough exploration of the bladder, wounds no sexual organs, permits free drainage, and leaves no chips or fragments behind to serve as the nuclei of fresh stones.

The experience of the surgeons at the North Staffordshire Infirmary seems to me to have been unique. The late Mr. T. Alcock repeatedly told me that he had never seen a death from the operation for stone by any method, and as far as I am aware out of 50 case of suprapubic lithotomy performed at the infirmary during the last ten years there have been no return cases of stone and no fatalities. This seems to me to be a remarkably satisfactory experience when one hears the results of other districts. One surgeon at the discussion at the annual meeting of the British Medical Association two years ago admitted a mortality of 50 per cent. for the suprapubic operation in his own hands. But the crushing operation was his speciality. But this discussion brought out the fact that in other hands the suprapubic operation was not without its tale of fatal cases. The one danger in the operation is, of course, wound of the peritoneum, but this is easily avoided if the bladder be properly distended. For some years we always used the rectal bag, but latterly this has been altogether discarded, and we rely on bladder distension only. The operation is, of course, not so showy or quite as rapid as lateral lithotomy, but it does not take very long to get into the bladder above the pubes, and the whole of the bladder is then easily explored. I have never seen troublesome hæmorrhage or extravasation or infection of the wound in the after-treatment of these cases.

Under these circumstances I feel that the suprapubic operation is the best for stone in the bladder, though I expect the devotees of the crushing operation feel equally secure of their position. Personally I like to see what I am dealing with, or at any rate to feel the area of operation with my finger. The crushing operation is not without its own peculiar difficulties and dangers, and unless all fragments are removed, return cases are frequent, and even with every care are too numerous.

THE VALUE OF CONTINUOUS IRRIGATION.

In dealing with open septic wounds and infected areas I hardly think that the great value of continuous irrigation, or lavage, is recognized as fully as it might be. In bygone days poultices of various kinds were largely used for this purpose, but the use of aseptic lotions and compresses is much more satisfactory. The following case is a good example of what can be done by continuous irrigation.

A lad fell in the pit, bruising his knee, on February 23rd. Two weeks later some swelling over the patella was noticed, and he stayed in bed for a month. I saw him on April 1, and found great gaping sinuses leading down to dead bone in the patella. On April 5th I removed dead bone and curetted the patella, but the joint rapidly became involved and suppurated. On April 7th the joint was opened on either side and drained, but high temperature set in, and on April 12th I excised the patella, removed all infected tissue, and opening the joint more thoroughly, set up continuous irrigation of the joint. For the first forty-eight hours mercury perchloride (1 in 10,000) was used, but the salt began to deposit on the tissues, and boiled sterilized water was used subsequently, and flowed continuously through the joint for sixteen days. The temperature kept

high till April 26th, and during the time two or three small abscesses were opened in the subcutaneous tissue round the joint. When irrigation was discontinued the sinuses rapidly closed, and the joint became shut off. The result will be, of course, a stiff joint, but the leg is saved. The method of irrigation adopted was by a reservoir raised above the bed on a stand, connected by a tube to a glass tube which entered the joint low down on the inner side; another glass tube, inserted into the joint low down on the outer side, afforded an exit for the fluid.

Nothing suits septic wounds of the hand and arm better than continuous immersion in hot boracic acid. Where immersion is impracticable frequently changed hot boracic acid fomentations form the best substitute.

A Clinical Lecture

ON A THIRD SERIES OF CASES OF

TOTAL EXTIRPATION OF THE PROSTATE FOR RADICAL CURE OF ENLARGEMENT OF THAT ORGAN.

Delivered at the Medical Graduates' College and Polyclinic.

By P. J. FREYER, M.A., M.D., M.Ch.,
Surgeon to St. Peter's Hospital, London.

In two lectures published in the BRITISH MEDICAL JOURNAL of July 20th, 1901, and February 1st, 1902, I described my new operation of total extirpation of the prostate and the anatomical and pathological considerations which render the operation practicable. I have now to record a further series of 6 cases in which I have successfully performed the operation, two of whom are present, so that you can question and examine them as to their former sufferings and complete relief therefrom.

CASE IX.

C. B., aged 58, admitted to St. Peter's Hospital, January 14th, 1902. Had attended as out-patient since September 25th, 1900, for stricture of the urethra and enlargement of the prostate. On first coming under observation he suffered from hypogastric pain, difficulty in micturition, and great frequency—every hour by day and night. These symptoms had been gradually getting worse for five years, during which time he had to pass a catheter frequently. This pained him much, and at times caused bleeding. I found a stricture at 6 in., which admitted a bougie No. 8, English scale, tightly; and this was gradually dilated till 15 E. was reached in December, 1900, after which this instrument was passed occasionally to keep the stricture open. The prostatic symptoms, however, continued to increase, and early in January, 1902, practically the whole of his urine was passed by catheter, which caused him pain and annoyance.

On January 8th examination showed that the prostate was much enlarged bilaterally, each lobe being tense, elastic, smooth, rounded, and fairly soft. General health fair; urine, specific gravity 1020, acid, cloudy, some pus and albumen. Cystoscopy revealed enlargement of both lobes in the bladder. The case was thus regarded as a suitable one for total extirpation.

Operation.—On January 15th, chloroform being given, I opened the bladder suprapubically. The prostatic enlargement into the bladder was found to be collar-shaped, most prominent on the sides, and wanting above. The forefinger of the right hand being introduced into the rectum to steady the prostate and render it prominent in the bladder, with the nail of the forefinger of the left hand I scraped through the mucous membrane over the left lobe till the capsule was reached. The left lobe was then gradually separated from the sheath below, outside, and above, and then internally from the urethra, which, with the contained catheter, was pushed up to the suprapubic arch, the lobes separating along their superior commissure. The left lobe was separated from the sheath in the same way, through the same opening in the mucous membrane. Finally, the prostate as a whole was stripped off the triangular ligament, and pushed into the bladder by the finger in the rectum, whence it was delivered by forceps through the suprapubic wound. The urethra was felt entire, covering the catheter, and only the thickness of the bowel separated the fingers in the bladder and rectum. There was very little hæmorrhage, and this was controlled by irrigation by hot boric lotion. The cavity occupied by the prostate rapidly contracted, so that after the irrigation it could scarcely be noticed, its walls contracting on the urethra. A large drainage tube was inserted in the bladder, and the abdominal wound closed round this by silk-worm sutures. This tube was removed in forty-eight hours, and the bladder irrigated daily through a large *coudée* catheter. There was scarcely any shock from the operation.

After-history.—The patient made an uneventful recovery, the temperature remaining normal except on the fourth day, when it rose to 99.7° F. Some urine passed naturally on January 21st, and the wound was completely closed on February 2nd. Discharged on February 7th. I saw the patient on March 25th, when he could retain his urine four or five hours by day and six by night. Urine clear, no albumen, no residual urine, and no trace of prostate per rectum. I have now the pleasure of showing you this patient in excellent health, retaining and passing his urine as well as he ever did in his life.

His prostate, weighing 2½ oz., a typical specimen of adenomatous enlargement of the organ, is shown in Fig. 1.