fetid ulcers of the leg. The discharge may be most offensive and septic, but so long as it escapes freely, the temperature is normal, and the patient suffers little. If pressure is now made on the surface of such an ulcer, so that the outward current is interfered with, or the granulating barrier is broken through so that septic matters find their way into the system, a considerable rise of temperature and marked constitutional symptoms follow. After cauterising living tissues absorption takes place. This is best explained by considering what actually occurs when a vascular part is seared by the cautery. The damaged part may be described in three zones—(1) The part most affected by the heat, which, if sufficiently great and long-continued, drives off the water from the tissue, which it disorganises, forming a crust of carbon; (2) more remote from the injury the tissues are in a state of inflammation, the arteries and veins are plugged with clots, the charred inner coat being curled up into the lumen of the tube, while the outer coat forms with the charred mass a cap over the burnt end of the vessel. The lymphatics in this area are less securely occluded. Although the lymph clots, it does so feebly; the lymphatic walls, containing less elastic tissue, retract and contract less than the walls of the bloodvessels. From this it follows that damaged cells readily find their way into the lymph circulation. (3) Outside this area of stasis, or plugging of the bloodvessels, over a considerable area an active hyperæmia or over-fulness of the bloodvessels occurs. This condition allows increased leakage and diapedesis from the distended arterioles and capillaries, while it makes the part feel hotter and look redder than natural. That the flow in the lymphatics from a damaged area is greater than normal is seen by the increased flow from the distal end of a cut lymphatic, which drains the lymph from the injured part. This increased flow depends partly, no doubt, on the increased leakage and diapedesis through the walls of the dilated vessels, but solid particles are also absorbed and swept into the lymph-current. That this is so is shown by the readiness with which solid particles of iodoform and opium are absorbed by a recently burnt surface, producing constitutional effects. To sum up briefly, it may be fairly assumed that before the formation of granulation tissue increased absorption of fluids and solids occurs. After the granulations have formed, a barrier to further ingress is made, the natural direction of the flow of liquid and the diapedesis of cells being from within outwards.

That the charred material and damaged tissue are sufficient, quite independently of any septic element, to cause a rise of temperature, is very probable. Perfectly aseptic blood-clot, introduced into the circulation, causes a rise of temperature. It may be shown, after simple fractures or large contusions, that there is always a rise of temperature, which is proportionate to the amount of damaged tissue and the absorbing power of the lymphatics and bloodvessels. In fractures of bone the rise of temperature is greater than in injury to soft tissue, probably because the bony walls of the vessels prevent their collapse, and thus allow a ready means of absorption. Again, the rise of temperature is greater when a large than when a small bone is broken—e.g., it increases with the number and size of the vessels torn across and the amount of blood extravasated. All this indicates that aseptic dead material in the body acts as an irritant, the amount of irritation, as indicated by temperature, being proportionate to the amount of damaged tissue and the absorbing power of the parts beyond the damaged area. In burns we have a quantity of dead and damaged tissue lying in a position which makes its absorption easy, and this material, even if quite aseptic, is just the kind of substance which would act as an irritant, when circulating in the blood current. That the "congestive symptoms" of burns are due to irritant absorption seems probable from the following considerations. The temperature immediately after the burn falls to 97° or even 95° F. This depression continues for twenty-four to forty-eight hours, after which there is a gradual rise for the next twelve hours, the temperature rising to 104° or even 106° F. This rise of temperature, which is in proportion to the amount of damaged tissue and the absorbing power of the surface, closely resembles the rise due to absorption of aseptic clot, as it follows immediately on the depression, and is gradual, but continuous, in its increase. The temperature having reached a maximum, remains up, subject to slight diurnal variations, until about the eighth day, when the granulations form a barrier. The pulse-beats

during the reactionary period increase in frequency and force. In some of the fatal cases the mode of death is very suggestive of pulmonary thrombosis. There is extreme restlessness, dyspnoea, and lividity. A cardiac murmur, basic systolic, is heard; but with a heart beating irregularly and rapidly, a murmur is difficult to detect, and, if present, might be due to irregular or incoördinate action of the heart muscle. In other fatal cases the patient sinks into a comatose state, which gradually deepens, until death supervenes. The mode of death closely resembles narcotic poisoning. The suggested explanation of these different ways of dying is this: In both cases there is absorption of dead and damaged material, which in some cases causes thrombosis of the pulmonary artery, analogous to pulmonary thrombosis, which sometimes occurs after simple fractures; in other cases the irritant paralyses the centres of the circulation and respiration, resembling narcotic poisoning by ptomaines or in koprostasis.

These observations seem to have an important bearing on the treatment of burns. In all cases of severe burns the temperature should be taken frequently, and carefully watched. If it rises above 103° F., it has reached a dangerous point, as death may follow in one or other of the ways described. Measures should be at once adopted to check the absorption by submerging the burnt part in a cool bath of some non-poisonous, antiseptic fluid. By this means all the loosened tissue is washed from the injured surface, and any pressure relieved, while the cooling effect of the bath lowers the temperature. In one case (burns of chest and abdomen) so treated with a bath of weak sanitas, which was lowered from 90° to 70° F., in twelve minutes the child's temperature fell from 105° to 102°. The whole appearance of the patient changed; from being drowsy and stupid he became bright and lively. This change was no doubt partly due to the cooling of the body surface. When the temperature rose a second time, the child was again bathed, with a result that it did not rise again, and the child recovered. How much benefit was due to the general cooling effect of the bath it is difficult to say; but when one considers that the dressing presses the dead tissue over the mouths of the lymphatics, while the movements of a restless patient pump the lymph along the vessels, it cannot be denied that an occasional or constant submersion in water has many obvious advantages.

SUPPRESSION OF URINE IN A CASE OF SINGLE KIDNEY, WITH AN UNUSUAL MALFORMATION OF THE GENERATIVE ORGANS.

By H. B. BRACKENBURY, L.R.C.P.L., M.R.C.S.,
HOUSE PHYSICIAN TO THE HOSPITAL FOR WOMEN.

THE following case is, I believe, absolutely unique, and I have therefore reported it somewhat in detail. For permission to publish it I am indebted to Dr. R. T. Smith and to Mr. Reeves, and for the post-mortem notes to Dr. Dalton.

M. A. M—, aged twenty-six, married five years (no children, but two miscarriages, the last five years ago), was admitted to the Hospital for Women, Soho, on Oct. 14th, 1890, complaining of pain in the epigastrium and vomiting. She stated that she had always been perfectly well until shortly after her marriage. Her illness then began with an attack of "inflammation of the womb," which kept her in bed for three months. At that time she had great pain in her lower abdomen, worse on the right side, but she had no trouble with her urine. She had had this pain ever since, and it had been worse during the last two years. For three years she had been subject to pain after solid food, accompanied by vomiting. The pain was in the epigastrium, came on immediately after food was taken, and was followed by vomiting in a few minutes. The vomited matter was often streaked with blood, but the patient had never had an attack of hæmatemesis. Melæna had, however, been noticed on one or two occasions. She had been losing flesh for twelve months.

She had had an occasional vaginal discharge for some years, and micturition was rather frequent. Catamenia commenced at the age of fifteen years. They had been regular as a rule, but scanty and painful. There was nothing of note in the family history.

On admission, the patient was a small ill-nourished woman, weighing 7 st., and looking much older than her years. Heart normal; lungs emphysematous; abdomen extremely tender over a small area in the epigastrium; slight tenderness elsewhere, particularly on the left side; no tumour to be felt. Vaginal examination: small cyst on posterior vaginal wall, about half way up it; cervix uteri small, but otherwise normal. Urine normal in appearance, acid, containing no albumen. On Oct. 17th, the diagnosis of chronic gastric ulceration having been arrived at, all food by the mouth was stopped, and the patient was fed by nutritive enemata—three ounces of either egg and milk or strong beef-tea every three hours. She bore these very well, and the treatment was continued for seventeen days. Then mouth feeding was cautiously begun, and on Nov. 6th solid food could be taken without any pain being produced, and the result was considered quite satisfactory. On Nov. 3rd the vaginal cyst was incised and plugged. This rapidly healed and gave no trouble. On the morning of Nov. 8th, the patient seeming quite well, her urine was found to contain a considerable quantity of blood. The usual amount, however, was passed, and there was no pain or other symptom of any kind. On the following day she complained suddenly of acute pain in the region of the right kidney, shooting down into the pelvis. The pain was very severe, but passed off in about three hours. During the previous twenty-four hours the urine had been normal both in amount and character, and the bowels had been well opened and the stool normal. At 6 P.M. on the 9th the patient passed a small quantity of urine, but she passed no more until 7 P.M. on the 13th. During these four days she complained of some pain in the right lumbar region, but until the morning of the 12th the suppression of urine did not seem to affect her general condition. Then, however, there was troublesome vomiting and general abdominal tenderness. The pulse throughout remained good. The bladder was quite empty and nothing could be detected with the sound. A consultation was held, and the case was considered to be one of mechanical obstruction of one pelvis or ureter (the right), with the other kidney either sympathetically irritated, or absent, or rendered useless by previous disease, of which, however, no history could be obtained. A hot bath, followed by a hot air bath, was ordered, and on the following morning (Nov. 13th) a quarter of a grain of pilocarpine was injected hypodermically. Both baths and injection produced profuse diaphoresis, and the patient seemed better. Consequently an exploratory abdominal section, which had been contemplated, was postponed. At 7 P.M. the patient passed two drachms of urine, highly albuminous, but containing no blood. At 10 P.M. she passed seven ounces, slightly smoky, and containing one or two small blood clots. Between 10.30 P.M. on the 13th and 7 A.M. on the 14th she passed twenty-one ounces more of blood-coloured urine, containing one-eighth of albumen. During the 14th she seemed better, but passed no urine. On abdominal examination there was general tenderness, more marked in the renal regions, particularly on the right side. On this side there was one spot just beneath the ribs where the least touch seemed to produce acute pain, shooting down into the pelvis. There was fulness and increased sense of resistance on the right side, which was absent on the left. These physical signs remained the same till the end. On the evening of the 14th the temperature rose to 100·6° from normal. On the 12th it had reached 101°, but this was taken immediately after the hot bath. At other times it was normal. On the 12th also there was diarrhoea, the bowels being opened eight times, and the motions being very loose and green, but not large. At no time was there any blood passed by the bowel while the patient was in hospital. At no other time was there any diarrhoea, the bowels being either normal or opened by enemata. On the morning of the 15th, after a hot bath, she passed nearly two ounces of urine. From the 15th to the 17th (early morning) she passed altogether scarcely an ounce of urine, about a drachm at a time. From the morning of the 17th not a drop was excreted. During the 17th her condition was not so good: the vomiting returned, there was a good deal of pain, and she seemed drowsy. At one time during the

night she became almost pulseless, and apparently moribund. The next morning (the 18th), however, she was better, and the abdomen was explored by Mr. Reeves. An incision five inches long was made at the external border of the right rectus, and the hand introduced. The right kidney was palpated, and found to be fixed in about the normal position. It appeared rather large and hard. There was no dilatation of the ureter or renal pelvis, and no stone could be felt. No left kidney could be discovered. The abdominal wound was then sewn up, and the patient removed to bed. It was considered useless to make a lumbar incision and drain. The patient rallied from the operation, but died at 1.30 A.M. the next day, having passed no urine, and having been vomiting for some hours.

The post-mortem notes are as follows (sixteen hours after death):—Thoracic organs normal. Only slight peritonitis round abdominal wound. Liver, spleen, and stomach normal. Left kidney and ureter absent. Left supra-renal body present, normal. All round the pelvis of the right kidney there was a great deal of fibrous thickening, through which the duodenum passed; the duodenum itself was normal. Right kidney large in all parts; pelvis dilated and full of blood, partly fluid and partly solid. Microscopically, the fluid here showed blood-corpuscles and blood-casts. The right ureter also contained blood. It passed through the thickened tissue behind the first part of the ascending colon, but its lining looked normal. Around the orifice of the right ureter in the bladder there was some submucous hæmorrhage. Bladder otherwise normal. The ascending colon contained blood. Its whole surface was deep red, and showed numerous ulcers with rough surfaces, in some cases with false membrane on them. Around the colon there was much fibrous thickening. Rest of intestine normal. The uterus lay well over to the right side of the pelvis and was very narrow. In both size and shape it resembled an average thumb. The right tube and ovary were normal. There was no trace of tube on the left side. The left broad ligament was very small and thin, and only inserted at the side of the cervix uteri. In it there was a thin solid cord—the round ligament. The left ovary, small and immature-looking, lay just above the true pelvic brim, as seen in the fœtus. The uterus was, therefore, only developed from one side.

Remarks.—This case is interesting and important from various points of view, both clinical and pathological. It is difficult to see how, at first, the diagnosis of gastric ulcer could have been avoided. No symptom was wanting, save profuse hæmatemesis; there was distinct localised epigastric tenderness, and no sign pointed in any other direction. The patient was treated as Dr. Donkin recommends in an article in THE LANCET of Sept. 27th, 1890. If she had left the hospital the day before acute urinary symptoms made their appearance, it would have been set down as a most successful case. As it turns out, there was no gastric ulcer at all. All her symptoms for some time had no doubt been renal. The entire absence of one kidney is rare, but by no means unknown. The importance of bearing in mind the possibility of such a condition is shown by this case. The fact that we had to deal in all probability with such a rarity was recognised some days before death, but unfortunately did not aid the treatment. I am not aware that any exactly similar malformation—or, rather, non-formation—of the genito-urinary organs as we had in this case has ever before been recorded. On the left side there was no trace of kidney, ureter, Fallopian tube, or uterus, while a small but otherwise perfect ovary was fixed to the pelvic brim. This condition would be accounted for by the absence of the left Wolffian body in the embryo. Unfortunately, many points about the case remain obscure. What caused the obstruction to the flow of urine, or to its secretion? Was the ureter pressed upon by the inflammatory tissue behind the ascending colon through which it passed? Why was there such acute colitis? Was this in any way secondary to the kidney condition? What part did it play in the production of the symptoms? Why was there submucous hæmorrhage round the vesical orifice of the ureter? Would any treatment have been likely to be of any avail?

UNIVERSITY COLLEGE, BRISTOL.—The erection of the new medical wing to this college is making satisfactory progress. It is expected to be ready for occupation at the commencement of the winter session next year.