

at subsequent injections and the intervals between the doses must depend on the influence produced by the preceding dose on the opsonic index.

If the right dose has been given a short negative phase will be followed by a well-marked positive phase, during which the anti-bacterial power of the blood is increased and the resistance of the patient to the disease increased. After tubercle inoculations this improved power of resistance may be maintained for several weeks, but, as a rule, it falls back again after ten days or a fortnight, and a further dose of the vaccine is necessary. Only the minimal dose must be employed which will produce a satisfactory response and this must not be increased until it ceases to produce its effect. The dose, moreover, must not be repeated until the effect of the preceding dose is passing off. If it were possible to produce a summation of positive phases it would be advantageous to give successive doses at short intervals, so as to produce a maximal favourable effect, but such summation is not possible in the case of tubercle. Each inoculation, therefore, produces its effect independently and it remains to take the greatest advantage possible of the increased elaboration of protective substances which the artificial stimulus has produced.

The results of treatment of some dermatological cases have already appeared in a paper by Pernet and myself in the October, November, and December numbers for 1906 of the *British Journal of Dermatology*. Some cases were also included in a paper of mine in THE LANCET of Jan. 19th, 1907, p. 144. So many other successful cases have now been recorded that the employment of bacterial vaccines must in the future prove of the greatest service in the treatment of disease when controlled by the method which Wright and Douglas have so ably elaborated. In conclusion, I have much pleasure in thanking Professor Sidney H. C. Martin for his kindness, encouragement, and advice.

Park-street, Grosvenor-square, W.

## A NOTE ON TESTS FOR ACETONE IN THE URINE.

BY BASIL J. F. JACKSONTAYLOR, L.R.C.P. LOND.,  
M.R.C.S. ENG.,

HOUSE PHYSICIAN, PADDINGTON GREEN CHILDREN'S HOSPITAL.

A FEW words on the tests for acetone in the urine may not be out of place at the present juncture when the conditions of recurrent vomiting with acetonuria are attracting so much attention. The tests ordinarily employed are: (1) the iodoform test; and (2) the sodium-nitroprusside test. The first mentioned is simple and, I believe, yields absolute evidence (with certain exceptions) together with microscopical examination of the iodoform crystals. The smell of iodoform produced when performing this test is unreliable, as a similar smell to that of iodoform is produced when iodine and alkaline solutions are added to urine irrespectively of the formation of iodoform. If acetone is present in small quantities distillation of the urine is advisable.

The sodium-nitroprusside test, which consists in the darkening which takes place on the addition of acetic acid to a solution of sodium-nitroprusside, urine, and liquor potassæ, is, I think, rendered more simple, delicate, and accurate by a slight modification—namely, the substitution of strong ammonia for the liquor potassæ and the elimination of the use of acetic acid. In the ordinary test when the solution of potash is employed there is a uniform reddening of the whole solution which on the addition of acetic acid in the presence of acetone becomes darker when the acid comes in contact with the urine, the darkening passing down as the acid sinks. Therefore, with this test the addition of liquor potassæ to the urine and sodium-nitroprusside yields a red colouration whether acetone is present or not, and it is only after the final addition of acetic acid that the presence of acetone is recognised and then only when there is a fair amount of the latter present. The detection of the presence of acetone is therefore dependent on the darkening of an already darkish red fluid by the final reagent acetic acid, and the degree of darkening, when acetone is present only in small quantities, is not altogether easy to determine. If, however, strong ammonia replaces the potash solution the test for acetone is as follows. On adding the ammonia to a solution of sodium-nitroprusside and urine the ammonia solution remains on the

top; thus there is a clear solution uppermost with the urine solution below. Should acetone be present, even in minute quantity, a well-marked and absolutely characteristic ring of magenta (or petunia) appears within from one to three minutes at the junction of the two fluids and gradually spreads upwards pervading the whole of the ammonia solution if acetone is present in considerable amount. In the absence of acetone usually no colouration occurs, but sometimes an orange-red ring forms at the junction of the urine and ammonia solution, but this bears no resemblance to the "acetone ring" described above, hence the presence or absence of the latter is easily ascertained by the method which I believe has not been generally recognised.

The strength of the solution of sodium-nitroprusside is not important, but it is important that it should be prepared fresh and a few crystals dissolved in a test-tube of water are sufficient.

## Clinical Notes:

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

#### A CASE OF RUPTURE OF A VERY EARLY EXTRA-UTERINE GESTATION; LAPAROTOMY; RECOVERY.

BY C. A. SCOTT RIDOUT, M.S., M.B. LOND., F.R.C.S. ENG.,  
SURGEON TO THE PORTSMOUTH AND SOUTH HANTS EYE AND  
EAR INFIRMARY; HONORARY PATHOLOGIST TO THE  
ROYAL PORTSMOUTH HOSPITAL.

THE following case is somewhat unusual owing to the early age of the extra-uterine conception and the entire absence of signs and symptoms preceding the rupture.

On Oct. 28th last I was asked by Dr. M. Aston Key of Southsea to see a young married woman in consultation who was presenting signs of some severe abdominal lesion. The patient was a healthy young woman, aged 23 years, who was married as recently as August 29th, 1906. Shortly after this date she had a regular menstruation period lasting for one week; at the end of September another regular period took place and on Oct. 22nd she again began to menstruate. This last period was rather shorter than usual and ended on the 26th. Otherwise she was in excellent health and attended a concert on the 27th. There had been no history of dyspepsia, hæmatemesis, or melæna. Early in the morning of the 28th on going downstairs she felt very faint and experienced severe pain in the hypogastrium rather to the right side; she revived and fainted again and this recurred several times during the morning. Vomiting occurred once in the afternoon and showed no peculiar characteristics. As she was getting much worse her medical attendant was summoned. When I saw the patient about 6.30 P.M. she was lying on her left side, moaning and in a very collapsed condition. Her skin was blanched; the pulse at the wrist was only feeble, flickering, and uncountable; the pupils were dilated; the abdomen was tumid, not distended, and below the umbilicus it was dull to percussion. She was anaesthetised with ether and an incision was made to the right of the linea alba through the right rectus abdominis muscle below the umbilicus. On opening the peritoneal cavity about two quarts of dark blood and clots escaped. The right Fallopian tube and ovary were normal, but in the region of the isthmus of the left tube there was a small swelling of the size of a hazel nut, from a small opening in which was presenting a small bunch of chorionic villi, which came away during handling and was unfortunately mislaid. The left Fallopian tube was then removed, considerable difficulty being experienced in securing all bleeding points on the uterine wall, some of which had to be included in passing the ligatures. The left ovary was normal. The lower half of the peritoneal cavity was then cleansed with absorbent pads and the wound was closed by peritoneal, muscular, and cutaneous sutures. The patient was in a profound state of collapse and so two pints of saline solution were infused into the right arm intravenously. She rallied soon after the operation, however, and made an uneventful recovery, being able to get up in three weeks' time.

The situation of the pregnancy in the isthmus of the Fallopian tube undoubtedly led to its early rupture. The

tumour, from its size and the smallness of the bunch of chorionic villi, could not have been of more than four weeks' growth.

As regards the diagnosis, the signs and symptoms presented by the patient undoubtedly pointed to internal hæmorrhage of an extensive character and this led me immediately to explore the region of the Fallopian tubes as being the most probable source of the hæmorrhage occurring thus suddenly in a young, healthy, rosy-cheeked woman, particularly as vomiting was a late and unimportant symptom and there was no hæmatemesis or mæna. The slight shortening of the last menstrual period was the only symptom at all indicative of any pregnancy and this one must own was a very slight one. Still, I consider it is always important to make very searching inquiries into the menstrual history and I think that this opinion is confirmed by this case.

Southsea.

#### NOTES OF A CASE OF STRANGULATED HERNIA ASSOCIATED WITH ACUTE HÆMORRHAGIC PANCREATITIS.

BY WALTER H. BROWN, F.R.C.S. IREL.

THE patient in the following case was a man, aged 60 years, and was admitted into the Leeds General Infirmary on August 2nd, 1903. The previous history was to the effect that he had enjoyed good health up to the day before admission, but on the evening of that day he was seized with a sudden and violent pain across the abdomen between the umbilicus and pubes. He vomited once or twice during the night. On admission the abdomen was somewhat distended and tender. There were a large hydrocele on the left side and a large hydrocele and hernia on the right side. The hernia was irreducible and tender. Shortly after admission he vomited a few ounces of dark fluid having a distinctly fæcal odour. His general condition was extremely bad, his pulse was 130 per minute and very feeble, and he was obviously in great distress.

After ether had been administered the hernia was operated upon and was found to consist of a large coil of small intestine, deep purple in colour, but not strangulated completely. The bowel was returned without trouble and the pillars of the ring were sutured. The operation evidently had no material effect towards giving relief; he continued to vomit at intervals and died next day. It may be well to note here that flatus was passed several times after the operation, but none before it.

At the necropsy it was found that the scrotum contained a double hydrocele; behind the one on the right side there was an old hernial sac now empty; the inguinal canal was closed by suture. The lungs were much congested. The heart was normal. After opening the abdomen and removing the liver the parts in the neighbourhood of the lesser sac of the omentum gave way easily. The head of the pancreas was natural in size but very deep-coloured. On the upper aspect of the body of the pancreas there was a greyish slough of about the size of a walnut. The lesser sac was full of dirty curdy fluid resembling pus. The foramen of Winslow was closed. There was extensive fat necrosis of the great omentum and mesentery. The gall-bladder was full of small stones; the spleen was very soft; the kidneys were small and granular.

This was the first case of acute pancreatitis that I have had the opportunity of seeing post mortem. I observed at the time of the operation that the patient was far more ill than could be accounted for by his physical signs. The hernia, however, was irreducible and might, if gangrenous, be responsible for all the symptoms noted. After the operation I felt convinced that some intraperitoneal catastrophe had occurred but the patient's condition did not warrant further operative measures. Nor would any surgical procedure have afforded much chance of saving life, as, for instance, draining the lesser sac, fat necrosis being already present. Whilst it may be possible to diagnose pancreatitis in a given case observed during days of gradual onset I do not see how a surgeon is even to suggest its presence in an acute attack, more especially when the condition is associated with irreducible hernia. In the present case the disease was ushered in with no special symptom other than the familiar "sudden pain in body with vomiting," which symptom in scores of cases disappears and gives no further trouble. Alike from the patient's point of view and the surgeon's it is unfortunate that inflammation of the pancreas may occur without

previous warning of any kind, and may prove fatal in 48 hours without exhibiting any distinctive symptom, so that the nature of the illness is only discovered at the necropsy.

The pancreas physiologically is a peaceful organ, the pancreas pathologically can be even as rapidly fatal in its attack, as the most virulent fulminating appendicitis.

Leeds.

## Medical Societies.

### PATHOLOGICAL SOCIETY OF LONDON.

*Anti-typhoid Inoculation in the Army.—Observations on the Spirochæta of Relapsing Fever and Tick Fever.—A Note on Blackwater Fever in Sierra Leone.—A Pseudo-diphtheria Bacillus from a case of Middle-ear Disease.—Bacillus Typhosus from Periosteal Abscess One Year after Typhoid Fever.*

A LABORATORY meeting of this society was held at the Royal Army Medical College, Dr. P. H. PYE SMITH, the President, being in the chair.

Lieutenant-Colonel W. B. LEISHMAN, R.A.M.C., gave an account of the progress of Anti-typhoid inoculation in the Army since the resumption of the method was authorised by the Army Council on the recommendation of the committee appointed by it to investigate the subject. The inoculations were voluntary but every effort was being made to popularise the method by means of lectures to all drafts and regiments proceeding on foreign service. As far as possible the inoculations were carried out before embarkation, but owing to various reasons the second inoculation was sometimes performed on board the transport. For this purpose vaccine was placed on board every outward-bound ship. The inoculations were also being carried out on a large scale in India and elsewhere and 20,000 doses of vaccine had been prepared and issued from the Royal Army Medical College during the last 12 months. Research work in connexion with the method had been carried on uninterruptedly at the Royal Army Medical College by Lieutenant-Colonel Leishman and his colleagues, Major Harrison, Major Grattan, and Lieutenant R. G. Archibald, and a short account was given of the lines of investigation and the practical bearing of some of the results upon the methods of preparing and standardising the vaccine. Numerous vaccines had been prepared from typhoid bacteria killed at different temperatures, by various chemical agents, by desiccation, &c., and their effects tested by measurement of the various protective substances which developed in the blood of inoculated animals. In several instances where the results appeared promising similar tests were carried out on man. The vaccine at present in use was described and an account was given of the mode of preparation and standardisation which had been somewhat modified from Sir A. E. Wright's methods in the light of the experimental work referred to. The bacteria were still killed by heat, but the temperature had been reduced to the minimum degree which would insure death in one hour—53°C. The deleterious effects of higher temperatures had been clearly brought out by some of the experimental work and it was suggested that the comparatively poor results obtained in some instances in the past might have been due to over-heating of the vaccine. The system adopted for ascertaining the protective value of the inoculations was then described, and the result of the inoculation of the 17th Lancers was given. This regiment, the only one which had been exposed to a severe epidemic of enteric fever since the modified vaccine had been in use, had 147 officers and men inoculated out of a strength of 509; they had 62 cases of enteric fever with 11 deaths; all of these occurred among the uninoculated with the exception of two, both being men who had refused the second inoculation; both of these men recovered.

Lieutenant-Colonel LEISHMAN, in a paper on the Spirochæta of Relapsing Fever and Tick Fever, after referring to the interesting nature of the problems awaiting solution in connexion with many spirochæta infections, described the results of his own observations. His material consisted of films of blood from cases of African tick fever and of relapsing fever from Austria, Aden, and several parts of India; in addition, through the kindness of Professor Karl