described above. I submit the following proposals for further investigation:

1. The preparation of suitable media of human and bovine material containing unheated blood serum.
2. The evolving of a vigorous strain of tubercle bacilli which will grow on human and bovine media which are not sterilized by heat.
3. The elimination of autolysis in such media and investigation into the possible action of autolytic enzymes on the tubercle bacillus.
4. The preparation of a tuberculin by the method described above.
5. Preliminary investigations to be carried out with bovine tubercle bacilli on media of bovine material.

In conclusion I have to express my thanks to Professor Tulloch for his valuable advice and assistance, and to Dr. Cumming for the time and labour he has given to the preliminary investigation.

A CASE OF TRANSVERSE ECTOPIA OF THE TESTIS.

BY

A. GRAY BANKS, M.D. GLASG., F.R.C.S. ED.,
SURGEON, EAST SUFFOLK AND IPSWICH HOSPITAL.

The interest of the following case is increased by the note Sir Arthur Keith has been good enough to append.

A man, aged 28, married three years, no children, was admitted to the East Suffolk and Ipswich Hospital in December, 1925, with a painful swelling in the left groin. Eighteen years earlier an operation for left inguinal hernia had been performed in the same hospital, but details are unobtainable. He had been aware of the lump ever since the operation and had noticed it becoming gradually larger, more superficial, and moving downwards. Nine months ago he had an attack of acute pain after lifting a heavy weight, and the lump became tender and swollen, and had remained more or less tender since. Two further attacks of pain occurred, one three months, and the other three weeks ago. On each occasion micturition was frequent for about two days; between the attacks there were no urinary symptoms. Sexual power developed when he was about 14, and has been normal since.

He was a spare, vigorous, active-looking man of good intelligence; the secondary sexual characters were well developed. A linear scar of old standing was present over the left inguinal canal, and lying at the external ring just below the pubic spine was a firm ovoid swelling about the size of a walnut, slightly movable and tender on pressure. The scrotum was small and contained only one testis (left), from which an easily palpable cord could be traced upwards. The right side of the scrotum was empty, and no opening could be felt at the usual site of the external ring (the entire absence of any weakness here was confirmed by intra-abdominal palpation during the operation).

Operation.

An oblique incision was made over the inguinal canal and the swelling identified as a testis (although at first sight the appearance suggested an ovary). It had a well marked tunica vaginalis. From the upper border of the testis a fold of fascia and peritoneum, forming a definite mesorchium and having a cord-like structure with fimbriated end along its free edge, entered the peritoneal cavity through the ring and crossed obliquely over the bladder as a lax membrane to the opposite pelvic brim, where it was attached about the point of bifurcation of the iliac artery.

The left testis was drawn out of the scrotum and examined. It was rather undersized, devoid of a tunica vaginalis, and on incising the tunica albuginea a normal testicular appearance was seen; the vas deferens of this testis was adherent to, and partially embedded in, a firm structure about a fingerbreadth thick, which ran upwards from the testis, through the inguinal opening, and down extraperitoneally along the left side of the bladder towards the base. In the intra-abdominal part of its course both vasa deferentia were embedded in it, the left more intimately, so that they could be dissected out only with great difficulty. When opened it was found to have a cavity admitting a fair-sized probe, the wall about a quarter of an inch thick, rugose, and apparently lined with endothelium.

The distal part was excised, about one to one and a half inches being left to avoid injury to the associated left vas deferens. The ectopic testis was removed with the accompanying fold, the cord having been freed from the above mentioned structure as far as possible, and the oblique muscles and skin sutured. The wound healed by first intention and the patient was perfectly comfortable on discharge two weeks later. A cystoscopic examination was refused.

Serial sections of the ectopic testis, kindly made by Sir Arthur Keith, showed only testicular tubules—no mixture of sex. "No spermatozoa are to be found and none in process of formation. The interstitial tissue is normal in amount (A. K.)."

The excessive rarity of the condition is shown by the fact that apparently only four cases of transverse ectopia are recorded.

1. Lenhossék in 1845 first described the condition in a man of 35 with two testes in the left half of the scrotum, the right lying a little higher than the left, in front and medianward. The vasa deferentia were closely united but distinct, the tubes separating only near the prostate.

2. Max Jordan in 1885 reported a case in a child of 8. There were two testes in one patent vaginal process with one vas which divided higher up. The testes were in the left half of the scrotum and the united vasa had coalesced for the greater part of their length.

3. Berg in 1901, operating on a congenital left inguinal hernia in a boy of 13, found two testes—one normal in a well developed scrotum, and the other, almond size, at the left ring. Both cords were intimately connected with the hernial sac; the ectopic cord had a distinct mesentery and passed up across the space of Retzius to the right inguinal region, whence it descended to the pelvis. The right ring was palpated and found closed.

4. Halstead (1907) records a case with two small testes and a large left inguinal hernia; the epididymes were fused, but the vasa deferentia were distinct up to the region of the internal ring where they were united.

NOTE BY SIR A. KEITH.

The abnormal structure found passing upwards from the testis, and descending to the base of the bladder, can only be the result of fusion and persistence of the Müllerian ducts, forming a uterus masculinus of unusual size and persistence. If this were drawn down into the hernial sac, as is quite possible, it would bring with it the attached undescended right testis. The vasa deferentia should be embedded in the "structure," exactly as found at operation. This, I think, is the true interpretation, not a double or dichotomous condition of the left testis.

It is to be supposed, therefore, that in this patient there had been a persistence of the stage reached and usually passed through in the third month of development.

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NEPHRO-URETERAL ANASTOMOSIS AFTER COMPLETE AVULSION OF THE URETER.

BY

R. CAMPBELL BEGG, M.C., M.D., F.R.C.S. ED.,
M.Sc.N.Z.,

GENITO-URINARY SURGEON, WELLINGTON HOSPITAL, N.Z.

A MAN, aged 42, was referred to me on January 19th, 1926, complaining of constant pain in the right loin. It had existed with varying intensity for many years, but he had had nothing in the nature of an attack of renal colic. Investigation showed that there was a round calculus in the right renal pelvis, and that the urine was infected with *B. coli* and was delivering pus. The kidney function, however, by dye tests showed that there was only slight loss of function on the right side as compared with the left. In the latter, indigo carmine, after intravenous injection, appeared in strong concentration in five minutes, while the dye did not appear till six and a half minutes from the right side, but the concentration was good. The calculus appeared to be about 1 cm. in diameter, so pyelo-lithotomy was advised.

Operation.

On February 12th the kidney was exposed with some difficulty owing to its high position; a portion of the twelfth rib had to be resected. The organ seemed healthy except for one or two points of subcapsular scarring. The pelvis was mostly intrarenal and the calculus was lying just outside the hilum, while immediately below it a ureter of normal calibre passed downwards. The calculus was removed by a vertical incision. The walls of the pelvis seemed to be very thin and there was a ring of ulceration where the stone had been lying. An attempt to stitch the walls of the incision with the finest round needle and catgut resulted in every stitch pulling through. My assistant had to exercise a certain amount of tension on the kidney to keep the field in view, and suddenly the ureter came completely away from the pelvis at the line of the circular ulcer. The line of separation was very close to the kidney, and the little pelvic tissue available for anastomosis was so friable that an end-to-end junction was impossible; after some attempts at this there remained no extrarenal pelvis, but merely a few bits of ragged tissue around the orifice of the renal sinus. Nephrectomy was considered, but owing to the comparatively good renal function present seemed undesirable. The ureter was not dilated and had good muscular walls. A No. 6F catheter

was passed butt-end first down the ureter into the bladder and the other end into the upper major calyx. The upper end of the ureter was split for half an inch on its outer surface and by means of stitches carried from it through the intrarenal pelvis and out through the kidney substance, so that the margins of the tube were approximated roughly to the frayed walls of the pelvis. A capsular flap was turned down to cover the junction. To ensure adequate drainage the pelvis was opened from the cortex and a drainage tube tied in. The free end of the catheter in the bladder was recovered and pulled through the urethra by means of flexible forceps through an operating cystoscope. The catheter was allowed to remain in place for seven days and the urine drained through the nephrotomy wound. At the end of that time there was spasm of the ureter on the right side and the ureteral catheter was removed.

Urine began to pass down the affected ureter, as evidenced by blood in the urine and a marked diminution in the leakage from the loin. On the tenth day a catheter was passed up the right ureter and met with no obstruction. Oxyceyanide was injected through the catheter and out through the loin. In six weeks the wound in the loin was healed and all the urine was passing through the normal channel. Cystoscopy showed that the effluxes were normal, and a large ureteric catheter passed into the pelvis of the kidney without obstruction. The pelvis could be distended to 10 c.cm. and then caused discomfort. Indigo carmine given intravenously appeared from the left side in strong stream in three minutes and from the right in only moderate concentration in seven minutes. The calculus was of oxalate type, almost exactly spherical, and 9 mm. in diameter.

At the date of writing (June 3rd) the patient states that he has no trouble and is carrying on his work, but that he had one attack of renal colic after returning home.

In cases where the kidney is high the proper exposure of the ureter and pelvis for operations on the pelvis may require a good deal of tension to pull the kidney forward and expose the posterior aspect of the pelvis. This can be obviated to some extent by carrying the lower part of the incision almost horizontally inwards instead of obliquely downwards and inwards. Such a catastrophe as occurred in the case reported, however, is unlikely to occur except where the pelvis is extensively ulcerated and its walls thinned. The question arises as to whether the incision should be made down to the calculus through the extra-pelvic fat without dissecting this away, so as to display the wall of the pelvis. It has been claimed that this technique gives quicker healing and is less likely to leave a urinary fistula. My own experience has been, however, that the quickest results are obtained by exposing the pelvic wall, and after careful suturing bringing a fat or capsular flap across, though it is probable that where any difficulty is experienced in sewing owing to the friable nature of the tissues the wound closes without any suturing at all if attention is paid to dilating the ureteral canal at the time of the operation and afterwards. To be forced, owing to an operative mishap, to remove a sound though slightly infected kidney in a case of stone is a disaster of the first magnitude, owing to the possibility of subsequent formation of calculus on the other side. An improvement in technique in this case would have been to pass the upper end of the splint catheter through the nephrotomy wound so as to give perfect control of both ends and prevent the possibility of the instrument coming out too soon.

ECZEMA AND DENTAL DISEASE.

BY

A. ANNESLEY GOMES, F.R.C.S.I., D.P.H.,
L.D.S.R.C.S.ENG.,
BURNLEY, LANCASHIRE.

THEORIES of the etiology of eczema may be stated briefly as: (1) neurotic, (2) local irritation, (3) thyroid deficiency, (4) toxic. The last is perhaps the most popular. The toxins occur in connexion with (a) constitutional diseases—for example, gout, diabetes; (b) chronic Bright's disease; (c) certain diseases of the liver; (d) alimentary tract. While mentioning the alimentary tract most writers limit the suggestion to the gastro-intestinal portion of it, for imperfect metabolism and malassimilation are thought to be the cause. The importance of the oral part seems to be little recognized. Macleod admits that digestive derangements may aggravate the disease, but says there is no evidence that they cause it *de novo*. French writers, he says, consider eczema a cutaneous manifestation of a diathesis not yet defined, and Brocq calls it "eczematiza-

tion," the symptom, rather than eczema, the disease. Given a diathesis or predisposition, the toxins arising from certain dental diseases can cause the manifestation of eczema or aggravate it if it already exists. The dental poisons may be absorbed in two ways: (1) by swallowing the pyorrhoeal or other septic discharges from diseased dental tissues; (2) by direct passage into the general circulation of toxins from septic foci concealed in the bone related to the teeth. The immediate recovery from an illness previously protracted, which I report here, proves this conclusively.

A man, aged 44 at the time, had recurrent attacks of eczema, beginning at about the age of 37. The last attack was of eighteen months' duration. It was intractable and increasing in severity. After persistent treatment by his family doctor and the consultant there was, according to the patient, only a slight improvement. His doctor now began to suspect oral sepsis. When I first saw the patient the eruption extended literally from head to foot in all its forms: redness, vesication, exudation, and crusts variously distributed. Examination of the mouth revealed general periodontal disease. There were pyorrhoea and secondary changes in the alveoli with chronically inflamed gums over them. I made a clearance of all the teeth (twenty) under regional anaesthesia (superior maxillary and mandibular) with novocain E. The after-effects of the injections were remarkably mild—only a slight soreness at their seats. The eruption began to disappear almost immediately. Within a week there was marked improvement, and in a fortnight the patient was able to discard the dressings of his head, hands, and feet, and walk down to my surgery for his temporary denture. After another fortnight he was quite cured and strong enough to attend to his ordinary duties, the only trace left being a roughness of the skin.

This case was treated in June, 1923, and I deferred reporting the results to give time for observation. Since then he has had a few short and mild attacks, which are directly attributable to his own indiscretions. These later attacks support the suggestion of a diathesis, but the immediate recovery following the extraction of the teeth shows that dental disease can be a serious contributory factor to be reckoned with.

British Medical Association.

PROCEEDINGS OF SECTIONS AT THE ANNUAL MEETING, NOTTINGHAM, 1926.

SECTION OF PATHOLOGY AND BACTERIOLOGY.

Professor J. SHOLTO C. DOUGLAS, M.D., President.

DISCUSSION ON LEUKAEMIA AND ALLIED CONDITIONS.

OPENING PAPERS.

I.—G. LOVELL GULLAND, C.M.G., M.D., F.R.C.P.ED.,
Professor of Medicine and Clinical Medicine in the University
of Edinburgh; Senior Physician to the Royal
Infirmary, Edinburgh.

At first sight it might seem impossible to say anything new about leukaemia, but the views of the profession evidently want clarifying as to the nature of the disease. The current textbooks of medicine and pathology are by no means dogmatic and some of them even evade any definite statement as to cause and nature. The original picturesque idea that it is a suppuration of the blood has, of course, long ago disappeared, as well as that of a mixed leucocytosis. More recently came attempts to find parasites in the leucocytes, which also came to nothing, and for a long time back the view that the disease is neoplastic has steadily gained ground, though some workers adhere to the notion that it is caused by organisms. The acute leukaemias certainly often enough resemble clinically an acute infection, and if fowl leukaemia is really the same disease the fact that it can be transmitted from one bird to another by the filtered cell-free juice of leukaemic organs is a strong point. But I do not think that we should be led away by a single fact, which after all may be capable of some other explanation, to neglect the great body of evidence which certainly points away from causa-