THE USE OF METHYLENE BLUE IN
GONORRHOEA.By JAMES MOORE, L.R.C.S.E., L.R.C.P.E.,
Belfast.

THE benefit derived from the use of pyoktanin as an injection first led me to think of using the anilines internally; of these I found methylene blue best suited. The cases in which I exhibited this drug were all first attacks, and this I consider a very important point bearing on the success attending this treatment.

CASE I.—J. C. consulted me on August 14th. The discharge had existed four days, and it was then seven days since the time of connection. He stated positively that it was his first attempt at intercourse. The penis was considerably swollen, the glans very much congested, and the prepuce oedematous. The discharge was copious, whitish-yellow in colour, without any odour. I washed the glans penis with hot boric lotion. A specimen of the discharge stained with methylene blue showed on microscopical examination large characteristic pus cells, almost every one of which contained micrococci—gonococci and staphylococci—with a few micrococci in the serum. I prescribed methylene blue 3 gr. thrice daily and citrate of potash 15 gr. thrice daily. On August 19th the pain and swelling had almost gone; the discharge, which was copious but serous, was examined microscopically without staining. I found pus cells not so abundant, containing few cocci which were stained. There were some epithelial cells. I collected a specimen and stained with methylene blue as on the first occasion, but could not make out a greater number of cocci than in the specimen examined direct from the urethra. The treatment was continued, and an injection of alum, 3 gr. to an ounce of hot water, was directed to be used thrice daily. On August 26th the pain was gone and there was no discharge. I have seen the patient twice since—on September 2nd and 23rd—and he has had no recurrence. The patient stated that twelve hours after administration of the drug his urine became dark blue, and during the treatment it varied from green to blue; the faeces were also blue.

CASE II.—A. B. consulted me on August 25th. He had had connection on August 22nd. He stated that he felt a slight smarting on urinating on the morning he consulted me; he also stated that he never had a discharge from the urethra before, but that he had suffered from soft sores two years before. The meatus was congested, and a clear serous discharge was visible. On staining the discharge with methylene blue and examining microscopically I found abundant epithelial cells, very few pus cells, and in only one of these could I find micrococci, though they were very abundant in the serum. I prescribed methylene blue 3 gr. thrice daily and citrate of potash 20 gr. thrice daily. On September 2nd he had no pain; the discharge was sero-purulent and scanty. Examined under microscope without staining, pus cells containing a few micrococci were seen, but none in the serum. A few epithelial cells were present. The micrococci were stained blue. The treatment was continued, with the addition of an injection of alum 3 gr. to an ounce of hot water. On September 5th he had no pain; the discharge was scanty and serous. Microscopic examination showed a few pus cells containing only a very few micrococci deeply stained, the alum injection acting not only as an astringent, but also as a mordant. No cocci were seen in the serum, but many epithelial cells. The treatment was continued. On September 10th there was no pain and no discharge. On September 22nd he had had no recurrence. He informed me that he had got intoxicated on September 15th and had had connection apparently without any bad effect.

I have treated 7 other first attacks with methylene blue with a result similar to the above, namely the acute stage in each was cut short, and the patient's sufferings greatly minimised. With regard to the mode of action of methylene blue in gonorrhœa, I believe that it interferes with the development and virulence of the micrococci causing the disease. This is probably due to the staining action of the drug, either on the organisms themselves, or on the soil in which they grow; some chemical change being brought about. Methylene blue is excreted by the kidneys unchanged, so that the patient in urinating flushes the urethra with a fluid capable of staining the organisms, and the mucosa of the urethra.

Some time after the administration of this drug it can be found in the blood—principally in the leucocytes—of any of the tissues. This fact I was able to prove by examining the blood from the finger of Case I. The amount present in the blood depends upon the relation existing between absorption and excretion by the kidneys and rectum. Now when the micrococci have penetrated into the submucosa and there cause chemotaxis, the leucocytes passing through the vessel wall, convey with them this aniline dye, so that the disease is attacked front and rear.

Let this explanation of the action of methylene blue in gonorrhœa be right or wrong, the clinical fact remains that the acute stage is cut short before the mucosa and submucosa are extensively damaged, and thus the risks of serious complications and sequelæ are lessened.

If experience shows that this drug in any way diminishes

the rapidity of development and virulence of micrococci in the tissues, it ought to prove a valuable adjunct to the treatment of general septic diseases.

A RAPID METHOD OF PREPARING PERMANENT
SECTIONS FOR MICROSCOPICAL DIAGNOSIS.

By DR. LUDWIG PICK,

Director of the Laboratory of Professor Landau's Frauenklinik, Berlin.

THE technique used in our laboratory for the microscopical diagnosis of curetted or excised material allows the preparation of sections cut, hardened, stained, and preserved within ten to fifteen minutes, often even in less time. The rapidity of the method offers among other advantages the possibility of deciding important questions bearing on the pathology of the case during the anæsthesia, or even after the operation has begun, as we have often successfully proved.

We employ the Jung-Heidelberg Hobel (carpenter's plane), ether spray freezing microtome, and in fact regard it as an integral part of the method. It yields with ease and rapidity a large number of fine, thin, and complete sections, with very little waste of ether.

The excised or curetted material is freed from blood and coagula by dipping in water and then brought directly on to the freezing plate of the microtome and frozen. In order that the freezing should be rapid and not too severe, it is important that the mass be laid flat, and be not thicker than 2 or 3 mm. The breadth is immaterial up to 1 cm. square, or even greater. The ice block so obtained in a few seconds must be merely firm, not stone hard; the knife must cut through lightly and without grating. Particles from curettage may be laid on the plate, a half dozen or more at once, and sections obtained from all at one time.

The sections as they are cut are wiped from the knife blade by the finger tip, floated into a 4 per cent. aqueous formalin solution, and left there four minutes to harden and fix the cell plasma and intercellular substance. The use of the finger in place of a brush is to allow the warmth of the former to thaw the section before it reaches the solution, avoiding in this way the formation of air bubbles in the tissue which are often very annoying. As the formalin hardens at once the disadvantages so often urged against the freezing method—that is, fragility, loss of epithelial elements, and, above all, the poor staining quality of the sections—are done away with.

From the formalin solution the section is carried directly into a 4 per cent. alum-carmin solution, and left three to five minutes, staining a deep red (4 g. carmine boiled three-quarters of an hour in 100 g. 5 per cent. aqueous alum solution, cooled, filtered). For transporting the sections from one liquid to another up to absolute alcohol a glass rod is used, about which the section is rolled, obtaining a flat and even specimen much more quickly and conveniently than with a spatula.

The formalin section hardening and immediate carmine staining are emphasised as being the essential points of the method, distinguishing it from others more or less similar.¹

The section taken from the carmine solution is rinsed in pure water to remove the superfluous stain, using the glass rod as before, and then dehydrated by bringing it for fifteen seconds each into 80 per cent. alcohol and absolute alcohol. Finally it is placed in xylol carbol to clarify, and mounted and conserved in Canada balsam.

The unused sections and uncut material may be preserved indefinitely in 80 per cent. alcohol, and subsequently stained or embedded by any method, exactly as with primary alcohol hardening.

With us the questions most frequently to be decided by microscopical diagnosis are: Malignancy or benignancy of tumours, ulcers, or erosions, existence of pregnancy, endometritis, or adenoma, etc. These are answered as efficiently and positively by preparations obtained by this rapid method as could possibly be obtained in any other way. Everyone using the method will be convinced of the exactness and distinctness with which the preparations show the proliferation and change of form of epithelium, abnormalities in number and development of glands, typical and atypical

¹ T. D. Callis, *Centrat. f. allgem. path. u. Path. Anat.*, 1895.

gland forms, decidua cells, placental residua, etc. Naturally this procedure, which has been tested by us only in gynaecological practice—diagnosis of uterine and vaginal, ovarian and tubal disease—would seem equally suitable for use in other fields where a quick anatomico-pathological diagnosis is required, and we hope that its wider use will confirm this view.

I am indebted to Dr. B. L. Eastman for rendering this note into English.

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

CONCURRENT MEASLES AND SCARLET FEVER.—NOTE ON THE INCUBATION STAGE OF MEASLES.

A. S., aged 9 years, was taken ill on June 25th, 1896, with vomiting and purging, and some feverishness. I saw her next day, when the temperature was 102°, and she complained of sore throat, and looked ill. Next day, June 27th, the temperature was 102.5, and the throat worse, with a scarlatinal rash, which was well marked next day.

The temperature kept up for a few days, and then gradually subsided, as did also the rash and other symptoms, so that by July 5th the child was feeling fairly well, and able to sit up a little in the bedroom, and desquamation had commenced.

On July 9th the child was not so well—complained of being cold and shivering, and was sick again on the next day, July 10th, when the temperature was 101°, and a measles rash came out over the face, which by the next day had extended over her body. At this time she was desquamating freely.

In three or four days the measles rash gradually died away, and the child began to feel well again, and went on well, and finished peeling in six and a half weeks from the commencement of the illness.

In this case the measles developed just fourteen days after the scarlet fever, so that if she contracted the two diseases at the same time, the incubation stage of the measles was fourteen days. I find that most authorities give the incubation stage as seven to ten days, although Fagge says that the disease rarely manifests itself before the tenth or after the thirteenth day.

The child was nursed by her mother only, who never left the house after the child was taken ill.

Stourbridge.

G. J. DUDLEY, L.R.C.P., M.R.C.S.

BELLADONNA AND THE BRONCHIAL FLUX OF PILOCARPIN.

I HAVE witnessed in a few cases where pilocarpin had been administered to produce diaphoresis, in various acute conditions, evidence of the heart giving out, owing to the exhaustion induced by frequent coughing and expectoration absolutely necessary to avoid being suffocated with the excessive bronchial secretion excited by the drug. In such cases "atropine"—the physiological antidote to pilocarpin—will frequently save life by checking the excessive bronchial secretion, and enabling rest and sleep to be obtained.

Ilkley.

AUGUSTUS H. BAMPTON, M.D.

OPERATION FOR FLUID CATARACT.

IN my *Clinical Lectures on Certain Diseases of the Eye*, page 33, I say regarding the Morgagnian cataract:

The cortical or outer layers of the lens become fluid, having a consistence of milk, and enclose a small hard central nucleus. Once seen you can easily recognise it when you see it again. The change or liquefaction of the cortical substance may commence just as the lens is undergoing maturation, or it may supervene after its complete maturation. It may be limited to superficial layers, or it may involve a very considerable portion of the substance, or the fluid portion may become absorbed altogether, leaving an opaque capsule enclosing a small nucleus. Occasionally the whole substance becomes fluid, without leaving any nucleus at all. This latter occurrence takes place more frequently in young persons than in old ones; it goes then by the name of the fluid cataract.

Although I have said that fluid cataract is frequently found in the young, I have not met with fluid cataract in an adult until I came across the following case, which was of a man aged 40 years. On November 17th, 1896, I operated on this patient thinking it to be a Morgagnian cataract. An incision

was made in the right cornea downwards, and while carrying the knife towards the opposite side to make the counter-puncture I lacerated the capsule, pierced the cornea, and proceeded to complete the section; the whole of the fluid escaped and left a clear pupil. I paused to see if there was any nucleus, and having made certain that none existed, I withdrew the knife without completing the section. I made a gentle massage with closed lids to bring in the field any hard portion that might be in the aqueous chamber; the pupil remained clear, and the case made a good recovery.

As accidents often take the initiative of discoveries, I mention this case with a view to suggest whether in operating for Morgagnian cataract it would not be advisable to allow the white fluid to escape before the entire section is completed, and if there be no nucleus avoid opening the cornea entirely, and thereby not incur unnecessarily a greater risk.

Bombay.

ACCACIO DA GAMA.

COCAINE IN GUNSHOT WOUNDS.

I HAVE had two cases this winter in which I have syringed a 10 per cent. solution of cocaine into wounds made by shot.

CASE I.—F. N., male, labourer, whilst eating his dinner under a hedge, was well peppered by a shooting party. I extracted six shots from various places, the worst being above the orbit under the supraorbital ridge, and $\frac{3}{4}$ inch depth from the eyelid. I injected the cocaine with a small dental syringe along the course of the shot, and was able to remove the shot with very little pain, only having to enlarge the wound in two situations, one by the side of the left inner condyle of humerus, and one between the metacarpal bones.

CASE II.—J. S., a beater, received four shot in the face and neck, which (the sportsman explained) were glance shot from a pheasant. I used cocaine to extract two, and within ten minutes the man collapsed with a very thin slow pulse, appearing to faint, and I removed the other two without cocaine whilst he was lying on the floor. This was an alcoholic case, and he had taken two wineglasses of brandy before being brought to my surgery; he was a great coward, and would not let me probe either of the wounds until I used a little cocaine.

I should like to know if others have seen bad effects produced by cocaine in alcoholic cases. I should add that in the first case I did not use more than $\frac{3}{4}$ ss of the 10 per cent. solution in all six situations, and my patient enjoyed watching the operations.

In none of the situations was cocaine injected hypodermically, but produced sufficient local anaesthesia by absorption along the course taken by the shot.

Broadway, Worcestershire.

CHARLES STANDRING.

COMMUNUTED FRACTURE OF RIB: EMPHYSEMA: RECOVERY.

ON September 18th, 1896, J. P., a mariner, while riding a bicycle, came into collision with a cart, the shaft of which struck him in the chest. I saw him directly afterwards, when he was suffering a good deal from shock; he complained of a severe pain in his back and a crackling noise in his chest distinctly heard when breathing. Over the second rib on the left side there was a round bruised area of about 2½ to 3 inches in diameter, extending outwards from about the junction of the cartilage with the rib, the rib was broken here, as also at the outer limit of the area, and a piece corresponding to the area named was freely movable. This area became alternately concave and convex during inspiration and expiration, accompanied by the crackling sound before mentioned, which was very loud. On palpation this area felt like "the feel of healthy lung tissue." There was a good deal of pain on breathing, with irritable cough and dark bloody expectoration. As he was unable to retain a recumbent position, he was propped up in bed with a rest and pillows; a pad of lint was strapped over the injured area to prevent further prolapse, and he was given 10 minim doses of tr. opii every two hours. Next day the crackling noise during breathing had almost disappeared, the protrusion and retraction of the injured area was not so marked, the hæmoptysis was less, but there had been an escape of air into the subcutaneous tissue, the emphysema extending up over the left clavicle and down to the nipple. Pain and cough were less urgent. A few moist sounds were heard all over the left