

that the lantern is not moved while adjusting the lens. The image of the tungsten ball on the paper should not exceed 10 mm. in diameter. The paper is now removed and the iris diaphragm of the substage swung out and the dark-ground condenser gently placed into position on the substage. Great care must be taken not to touch the mirror or to move the microscope while this manipulation is being carried out. The condenser is then racked up to the level of the stage. The 2/3 inch objective, which has already been centred, is put in position and a No. 1 eyepiece inserted into the draw-tube. The surface of the condenser is brought into focus and the rings engraved on the surface are carefully centred by means of the centring screws of the carrier of the condenser. The apparatus is now ready for use.

To examine the cultures, switch on the heating bulbs of the microscope incubator and allow the temperature to become steady at 38° C., if this has not already been done. Open fully the iris diaphragm of the lantern and note again that the dark-ground condenser is centred correctly. Rack down the condenser about 1/4 inch. Take the culture to be examined and on the under side of the glass slide place a large drop of cedarwood oil. Place the slide in position on the stage of the microscope and rack up the condenser until the oil on the slide touches the top of the condenser. Air bubbles must be avoided. Focus the central fragment of tissue in the culture and clamp slide to the stage. Rack up the condenser; a dark circle gradually appears in the centre of the field, which becomes smaller as the condenser is raised, and suddenly a very bright image of the tungsten ball is seen focused on the fragment. This bright image should be exactly in the centre of the field. When the light is seen truly centred through the fragment the 2/3 inch objective is removed carefully and replaced either with the 1/8 inch or the 1/12 inch oil immersion as required. The iris diaphragm of the lantern is closed to an opening of about 1/8 inch in diameter and the oiled objective brought down and focused on the central fragment. The condenser is now racked slowly up, and if the centring is true a small area of light will be seen in the centre of the field. If the centring is not quite true this area of light will appear to one side of the field, and a slight adjustment of the objective with the key of the carrier is permissible in order to bring it to the true centre. If, however, the area of light is quite outside the field then the apparatus must be again set from the beginning. The worker is warned that it requires considerable practice to obtain this true centring, but unless the necessary skill is acquired good results cannot be expected. When the light is correctly centred the culture is moved by the mechanical stage so that cells at the edge of the central fragment which are in single layer are brought into the field. To obtain good definition the objective and condenser are carefully focused and the light of the lantern is adjusted by the iris diaphragm of the lens. A mercury green line filter placed in front of the lantern renders the light approximately monochromatic and increases the sharpness of the image; in addition, light of this colour is useful in preventing eye-strain.

It should be noted here that the dark-ground method of illumination shows up one thing only, and that is the interface between two surfaces of different refractive index. When each of the substances on either side of the interface is clear then the interface is shown as a white line with blackness on either side of it. If, however, one of these substances should contain, for example, particles of a different refractive index, then this substance will appear granular or cloudy, according to the size of the particles. A bright light will show up as a cloud the presence of particles which, owing to their fineness, a less bright light would leave as a complete blackness.

Cultures of tissue cells of about eighteen to twenty-four hours' incubation which are growing well should be selected for examination. In such cultures the outlines, internal structures, and complex internal movements of the vegetative cells are clearly shown. The vegetative cells when growing upon the cover-slip usually have a feather-like outline. The cytoplasm is clear and in it the various cell structures are seen embedded; the nucleus appears as a clear oval or rounded body with a sharp outline and contains

one or two distinct, slightly opaque bodies—the nucleoli. In the cytoplasm the most prominent objects are small globules of fat which are present in varying numbers in practically all cells cultivated *in vitro*. These fat globules are seen as very bright refractile spheres. The fat globules vary much in size and become larger and more numerous as the culture grows older. A varying number of fine somewhat refractile granules are also seen; these are quite small and not so bright as the small fat globules. The mitochondria are clearly seen in the cytoplasm as fine threads which vary greatly in length. The centrosphere shows as an obscure area on one side of the nucleus. The cell undergoing mitosis is not well shown by dark-ground illumination, as such cells become spherical in shape and thus are not so suitable for critical study as the flattened vegetative cell. The fat globules, however, and some of the small granules and some of the mitochondria can usually be made out lying round the clear spindle-shaped area of protoplasm, in which can be seen indications of the chromosomes, especially when the cell is at metaphase.

The structures described above can be well seen in cultures examined under dark-ground illumination at room temperature without the use of a microscope incubator, but the fascinating movements of the cell and its structures do not take place under these conditions.

REFERENCE.

¹ Strangeways, T. S. P.: Observations on the Changes seen in Living Cells during Growth and Division. *Proc. Roy. Soc., B*, xciv, p. 137.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A METHOD OF REDUCING CERTAIN DISLOCATIONS OF THE SHOULDER.

I WAS recently called to a colliery ambulance room to see an old man—an underground haulier. He was sitting on a bench with the right arm hanging down by his side, and he was apparently in great pain.

Half an hour before the patient had been pushed by his horse and had fallen against the side, receiving a sharp blow on the upper and back part of the right shoulder-joint. He had "felt his arm go out" and had "felt sick." He had a very obvious subcoracoid dislocation of his right shoulder-joint. He had never before had a dislocation.

Stripping him of his shirt, I tried Miller's method of reduction with countertraction by means of a towel round the chest for some time, but without success. I then carried out Kocher's manoeuvres, but these also failed to effect reduction. I resorted, in turn, to hyperabduction with traction, to leverage with the patient's arm round my waist, and to the heel in axilla method. These were all unavailing. I was about to administer an anaesthetic when it occurred to me to try a simple manipulation of the head of the humerus, which I could feel medial to the biceps and coraco-brachialis muscles. This was immediately successful—despite the fact that the patient was not faint, nor were the muscles relaxed. Further, the successful method caused the patient no pain at all. The plan was as follows (for right shoulder):

1. With the patient recumbent, the right arm is grasped at the elbow and lifted forward and upward until the patient's arm is almost extended above his head. This places the arm in position for movement 2, and relaxes the biceps, coraco-brachialis, and deltoid muscles.

2. With the patient's arm still raised, pressure is applied to the elbow as if trying to make the head of the humerus touch the table. The line of force is thus vertical, from the elbow through the shaft and head of the humerus. At the same time the operator's left fingers are spread out on the back of the patient's right shoulder, while the thumb in front presses the head of the humerus downwards and so helps it to travel back under the muscles whence it came. By this manoeuvre the head of the bone passes back round the neck of the scapula to a position below the glenoid cavity. The dislocation is thus converted into a subglenoid one.

3. The patient's arm is now brought down parallel with the trunk.

4. Finally, with the operator's clenched left fist in the axilla to act as a fulcrum, the patient's elbow is now approximated to the side—when the head of the bone will re-enter the capsule, and will be felt—and heard—to slip over the labrum glenoidale into position.

After-Treatment.—In this it is important that the elbow on the injured side be well supported, thus preventing the head of the humerus from pressing on the damaged lower part of the capsule.

Pontycymmer, Glam.

VERNON NEWTON, M.R.C.S.Eng.

Ministry of Health report on rheumatic diseases, published in 1924. Continuous attention was paid to them in deciding the administrative policy of the Ministry, which used all the pressure and influence it could bring to bear to secure the improvement of housing conditions which might cause rheumatic diseases in children.

Motor Drivers.—During the discussion on the estimate for the Ministry of Transport, on July 14th, Mr. Bromley asked whether, in view of the proposed introduction of coloured light signals for regulating road traffic, the Minister had made any provision to test motor drivers for colour-blindness; and Mr. Palin urged that driving licences should be granted only to applicants possessing satisfactory physical qualifications. Eighteen was young enough for the driver of a light motor vehicle, and 21 for a heavy lorry. He suggested also that the time for which a driver should be allowed to work ought to be limited, as was the case with railways and tramways. A fatigued driver was a danger to the public, and there ought to be prescribed periods of rest. In the course of his reply Colonel Moore-Brabazon (Secretary to the Ministry) said that the danger of dazzling headlights was becoming less every day. A vehicles bill about to be introduced would lay down standards for the weight of various types of vehicles. In reply to a question the Home Secretary said that during the first six months of this year the metropolitan police had taken out 3,000 summonses against motorists for excessive noise. The noise was due probably to inefficient silencers, particularly in the case of motor cycles. The question was being discussed between the Ministry of Transport and the Motor Cycle Manufacturers' Union. In answer to another question, the Minister of Transport said that complaints had been received with regard to the pollution of the atmosphere by steam-driven vehicles. The matter could be dealt with under the existing law, the enforcement of which was for the police.

Indian Opium.—The Home Secretary informed Mr. Ponsonby that 116,000 lb. of raw opium were imported into this country from India in 1925; 16,000 lb. were exported during the same year. The Indian opium retained in this country was used for the manufacture of morphine and other drugs and medicinal preparations. In five years 730 lb. of refined and 6,050 lb. of crude morphine hydrochlorate had been manufactured in India.

Notes in Brief.

Deaths from cholera registered during 1924 in Indian cities were: Calcutta, 1,250; Rangoon, 132; Madras, 96; Karachi, nil; Bombay City, 34.

Mr. Chamberlain told Mr. Kennedy, on July 15th, that he could not yet say which of the recommendations of the Royal Commission on National Health Insurance would be adopted by the Government nor when it would be possible to introduce the necessary legislation to give effect to them.

(To be continued.)

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following candidates have satisfied the examiners in both parts of the examination:

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE.—H. M. Ayres, J. L. Dunlop, Bandi Ethirajulu, N. E. Goldsworthy, Riad Abdel Noor Henein, *Faiid Hilmy, Wasfi Omar, *Trilok Chand Puri, F. C. Tibbs, *Abdul Wahid el Wakil.

* Distinguished in the examination for Part II.

The following candidates have been approved at the examinations indicated:

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY.—*Part I:* I. Arons, Frances Dooley, H. Franklin, L. Freeman, H. M. Grey, Elsie H. Parker, Constance A. P. Wood. *Part II:* I. Arons, A. E. I. Connolly, Jivan D. Dhruv, A. C. Dixon, H. H. Elliot, Mollie Fisher, H. Franklyn, Margery Freeborough, H. J. Louw, P. J. McKenna, Elsie H. Parker, R. Phillips, S. J. Rom, A. C. Rusack, J. O. P. Smith, H. T. Stack, J. G. Stephens, Constance A. P. Wood.

Medical News.

A DINNER arranged by the London Association of the Medical Women's Federation was held at the Welbeck Palace Hotel, on July 15th, in honour of Dame Mary Scharlieb. The President, Dr. Christine Murrell, presided, and the health of the principal guest was proposed by her old friend and fellow student, Dr. Jane Walker, who spoke warmly of her personal qualities and professional standing. Dame Mary Scharlieb was over 40 years of age before she ever had a scalpel in her hand, and now, at 81, she was still operating with unimpaired judgement and skill. Dr. Walter Carr paid tribute, not only to the outstanding surgical ability of Dame Mary Scharlieb, but to her high character. All her friends would rejoice at the national recognition of her services, which were the more valuable because the love of her fellow creatures had prompted them. Lord Riddell pointed out that the British virtues of courage, pertinacity, and ability were here combined with charm of manner and an unusual and enduring vitality. Sir Alan Anderson praised the pioneer spirit that was an inspiration to all younger women,

and Lady Barrett, as dean of the London (Royal Free Hospital) School of Medicine for Women, spoke of the pride of all members of the school in the honour that had been conferred on Dame Mary Scharlieb. In reply, Dame Mary Scharlieb said that if life were a quest for happiness she had discovered how to achieve it in the love of God and of her friends. Among the guests present were Sir John Rose Bradford and Sir James Berry.

THE KING has been graciously pleased to confer the Territorial Decoration upon Lieut.-Colonel J. W. Craven, M.C., and Major Charles Douglas, both of the Royal Army Medical Corps.

A SCHEME for a general contributory system of pensions, supported by King Edward's Hospital Fund for London, has now been accepted by sixty-nine of the hospitals in London. It will include nurses in all branches of the profession, as well as those in hospital service.

THE Committee upon the Physiology of Vision, appointed by the Medical Research Council at the instance of the British Medical Association, has issued a report (H.M. Stationery Office, 2s. 6d. net) by Mr. R. J. Lythgoe, M.A., B.Ch., founded upon recent literature on the relation of illumination to visual capacities.

AS announced last week, the post-graduate medical hostel at the Imperial Hotel, Russell Square, London, W.C., will be opened on Monday next, July 26th. There will be a dinner (5s.) at 8 p.m., and at 9 a meeting over which Dr. Alfred Cox will preside, when Sir D'Arcy Power will give an address on the hostel and its objects; ladies will be welcomed. On Friday, July 30th, at 9 p.m., a discussion on the difference between inflammation and hyperplasia will be opened by Sir G. Lenthal Cheatle. All medical practitioners are invited to attend.

THE Fellowship of Medicine announces that the last of the demonstrations arranged for this session will be given by Mr. Dorrell at the Royal Eye Hospital, Southwark, on July 30th, at 3 p.m.; it will be open to members of the medical profession, without fee. In connexion with its intensive courses in medicine, surgery, and the specialties attention is directed to the formal lectures throughout the week at the Prince of Wales's General Hospital, Tottenham, at 4.30 p.m., which are open to members of the Fellowship. The West End Hospital for Nervous Diseases is providing weekly courses of lecture demonstrations until August 12th. Owing to unforeseen circumstances the intensive course at the Brompton Hospital for Chest Diseases has been cancelled. The entire clinical work of the hospital will be available, however, daily throughout the month to graduates on payment of the fee of 1 guinea. From August 18th to 28th the Queen's Hospital for Children will hold an all-day course, and the Queen Mary's Hospital has arranged an intensive revision course from August 23rd to September 4th. Practical courses in anaesthetics and courses in obstetrics and child welfare at the City of London Maternity Hospital can be arranged by the Fellowship. For full particulars as to details of these various courses inquiries should be made to the Secretary of the Fellowship, 1, Wimpole Street, W.1.

THE campaign for cancer research instituted by the University of Sydney was, according to an Exchange dispatch, formally launched at a meeting presided over by the Governor of New South Wales on July 14th. It is hoped to obtain £100,000; towards this amount £25,000 has already been subscribed.

THE house of the Royal Society of Medicine will be closed during August, but the library will be open on week-days from 11 a.m. to 6 p.m., except on Saturdays, when it will close at 1 p.m.

DR. ARTHUR CUSHNY, professor of materia medica and pharmacology in the University of Edinburgh, left estate of the value of £22,140, with net personalty of £21,984.

THE Secretary of the Department of Scientific and Industrial Research announces that a licence has been issued by the Board of Trade to the British Food Manufacturers' Research Association, which has been approved by the Department as complying with the conditions laid down in the Government Scheme for the encouragement of industrial research.

THE seventh Congress of Italian Industrial Medicine will be held at Genoa from October 12th to 15th under the presidency of Professor G. B. Ramoino. Among the subjects to be discussed are individual conditions and organic changes in persons affected by electric currents, and workmen's dwellings. Further information can be obtained from the general secretary, Dr. Agostino Crosso, Via Frugoni 19, Genoa.

A POST-GRADUATE course in tuberculosis will be held at the Strasbourg Faculty of Medicine under the direction of Professors Canuvt and Vaucher, from October 10th to 25th. The fee is 200 francs. Further information can be obtained from Professor Vaucher, Rue de l'Université 22, Strasbourg.