

The essays must be sent, not later than November 10th, to Miss Tindall, care of Mrs. Jackson, Clare House, Clare Road, Byculla, Bombay.

Miss Bonsor, the Secretary and Treasurer of the Trained Nurses' Association of India, has offered two prizes (1st and 2nd) for the correct or best answers to the following questions.

The answers must be the work of the candidate alone and members of the Association of Nursing Superintendents of India are not eligible.

- (1) How do you prepare raw silk for operation purposes ?
- (2) How do you prepare raw catgut for operation purposes ?
- (3) How do you prepare Kangaroo Tendon for operation purposes ?
- (4) How do you prepare Mohair for operation purposes ?
- (5) What percentage would you make your—
 - (a) Stock Saline (theatre) ?
 - (b) Stock Iodine Solution ?
 - (c) Stock Lysol solution ?
 - (d) Stock Hydrag. solution ?
- (6) On what occasions and during what operations must no disinfectants be used ?

Answers to the above questions should reach Miss Bonsor, Curzon and Bowring Hospital, Bangalore, not later than November 18th.

X-RAY DIAGNOSIS TREATMENT IN MODERN PRACTICE.

By ALBERT C. MOORE, M.R.C.S. (England) and L.R.C.P. (London).

THE object of this paper is to indicate in as brief a way as possible the extent to which the X-rays or Röntgenology has become a permanent factor in the diagnosis and treatment of disease. From the time of its introduction when its use was confined to a diagnosis of the seat and character of fracture, investigations have continued with experiments in most, if not all, regions of the body, with exceedingly satisfactory results. In order to make my remarks as concise as possible let me first deal with the question of diagnosis.

(1) *In Diseases of Bones and Joints*—Whether the suggestions of Mr. Arbuthnot Lane that every fracture should be cut down upon and wired, be accepted or not, the value of a precise knowledge of the extent, character and situation of fracture before treatment is essential. Those who have been accustomed to work with X-rays realise the disadvantage in India of so frequently having to do without. The X-rays have especially proved their value in the discovery of fragments in comminuted fractures and also in impacted fractures. Nowadays fractures are frequently set in the X-rays room, so that the exact position of the fragments can be actually seen.

The differential diagnosis between an osteoma and a periosteal sarcoma is of great value. In the latter the characteristic specular of bone can be seen radiating upwards into the growth, differing from the former with its layers of cancellous and compact bone.

The myeloid sarcoma which so frequently attacks the head of the tibia can be distinguished from a periostitis in the light shadows replacing the dark shadows of bony tissue.

In the regions of the skull the X-rays are increasingly being used for diagnosis. This is especially so in dental surgery. It is used for the discovery of the position of undescended canine teeth in children, in the investigation of canines of the jaw and in many cases of oral sepsis. Infection of the roots of teeth due to improperly fitting bridges has also been the subject of recent investigation.

Howard Pirie says that the chronic mastoiditis is very typical in a skiagraph: the air cells are absent, the petrous bone stands out as a very dense roughly triangular area, with its apex pointing upwards and backwards and its posterior border forming part of a sharp crescent, shaped line which corresponds to the upper and anterior border of the lateral sinus.

In joint disease the X-rays have been used to advantage. In osteoarthritis the cartilage may be seen eaten away, and mineral deposits observed. Bony growths may be distinguished from ligamentous adhesions. In charcot's joint disease it is an additional aid to diagnosis.

Separated epiphyses can be distinguished from ordinary fractures.

(2) *Gastro-intestinal Conditions*.—Perhaps the greatest advancement has been made in the diagnosis of these conditions. Apart from the extensive knowledge which has been gained of the normal physiological action of the stomach and intestines in the disposal of food, as well as the positions and relationships assumed by the former, the investigation of pathological conditions has been very thorough. Most of the experiments are based on Handek's double meal method; that is a bismuth meal is given at 7 a. m., and the stomach is examined at 1 p. m. for residue or otherwise, and the bowel for position of the meal. A second watery suspension is then given to see the size, shape and mobility of the stomach itself. These results are compared with the results obtained from a normal stomach and intestine, and conclusion reached based on the length of time occupied by the stomach in the disposal of the meal.

The condition known as hour-glass contraction of the stomach has been fully investigated and the diagnosis is regarded as one of the triumphs of radiography.

Intestinal stasis and the question of constipation have also occupied many observers.

(3) *Pulmonary Disease*.—During the past year reports have been published on the investigation of tubercular cavities and deposits in the

lung, and it has been stated as a result that tuberculosis as a general rule commences in the apex of the lung.

(4) *The Urinary System*.—Having the question of calculi to be mentioned under the heading of foreign bodies, some work has been done in investigating hydronephrosis. In this work silver salts have taken the place of bismuth and the pelvis of the kidney has been dilated by catheterisation of the ureters.

The differential diagnosis between renal calculus and malignant growth or tuberculous disease has also received some attention.

(5) *Uterine Conditions*.—In America two workers have recently published a paper on the differential diagnosis of a fibro myoma and pregnancy. Side views of the abdomen were taken with an exposure of four seconds and the spine, thorax, legs and arms of a foetus were plainly seen. These observers have now examined more than 150 pregnant women and they state that the foetus is observable from the fourth month.

(6) *Foreign Bodies*.—There is a classic photograph at the London Hospital of a toy bicycle with a wire monkey in the bronchus of a child from which it was successfully removed. Until recently it has been even with the aid of an X-ray plate a difficult matter to remove needles, splinters, etc., from hands and feet, for the reason that the angle at which the object is lying is not reproduced on the plate. Now, however, instruments have been invented bent at right angles, so that it is possible to work under the X-ray screen itself.

Renal and vesical calculi may be detected, although in the latter case the cystoscope is more frequently used. Gall stones cannot be seen unless surrounded by calcium. I have left myself no space to deal with treatment by the X-rays, but I might just mention that it has been employed successfully in the reduction of the size of spleens both in Hodgkins disease and other diseases affecting the spleen.

RICKETS (RHAKHITIS).

By CAPTAIN HARKNESS, I.M.S.

Definition.—A disease of infants, characterized by impaired nutrition of the entire body, and alteration in the growing bones.

Etiology.—It occurs in all parts of the world, but is most prevalent among the badly-housed and ill-fed poor of the big cities. Lack of sunlight, impure air and lack of exercise are important predisposing causes. A disease of 1st and 2nd years of life rarely occurring before 6th month. A faulty diet is one of the most important factors in the production of the disease and it is therefore far more common among artificially fed than the breast fed infants: the deficiency of animal fat and protoid being mainly responsible.