

in the violet and blue segments of the spectrum, hence its light has a cold greenish-blue appearance and makes the skin look grayish-green. The thermal output of this lamp is practically nil, therefore it is often used in conjunction with a tungsten filament lamp which gives radiant heat. There are two types of quartz mercury vapour lamp one of which has an evacuated quartz burner with a little mercury in it and the other, the atmospheric type, has the whole burner filled with mercury and is operated at slightly above atmospheric pressure. The evacuated Q.M.V. lamp is started by switching on the current and tilting the burner so that a stream of mercury runs down it, so connecting the positive and negative poles, which are at opposite ends. The mercury is volatilized and the vapour acts as a bridge for the current when the burner is returned to its normal position. Owing to the fact that a deposit forms on the quartz from the condensed mercury after the lamp has been burned constantly for some months it is necessary to have the burners rejuvenated regularly, as very little ultra-violet radiation can penetrate the coated burner. In the atmospheric variety of the mercury vapour lamp a heating coil is passed round the mercury tube and vaporizes a little of it so that the arc is struck in this way. There are several kinds of mercury vapour lamps for focal use, of which the Kromayer is perhaps the best known. This consists of a small U-shaped burner of transparent fused rock crystal containing mercury and is enclosed within a metal box which has a quartz window. Water is allowed to circulate within the hood in order to keep the window cool. The arc is struck by tilting the hood in the same way as the evacuated quartz mercury vapour lamp. When using focal radiation it is common to compress the affected part in order to obtain deeper penetration of the rays. For this purpose the window of the burner may be used if the area is flat, and if rounded it is common to employ quartz lenses which focus the light. For the irradiation of cavities such as the mouth and nose there are special applicators which fit the window of the lamp. The peculiarity of these is that, although they are formed completely of transparent quartz, they allow no lateral loss of ultra-violet radiation, and even if bent at an angle, the whole output of the rays is focussed in the end of the applicator. Such appliances can be sterilized by placing them in spirit. There are also certain filters which can be fitted to the Kromayer lamp for the isolation of desired types of radiation. The dark filter absorbs all visible light and allows only ultra-violet to pass. Such filters are used chiefly for diagnostic purposes. Owing to the phenomenon of fluorescence certain materials have the power of changing the invisible ultra-violet rays which fall upon them in such a way that a visible glow is reflected from them. Human skin is faintly fluorescent, but certain diseased tissues show a very different fluorescence from normal skin. Ringworm of the scalp can be detected at once under ultra-violet radiation as the diseased hairs glow with a bright green radiance, while the healthy ones look as though dusted with flour. Some other diseases which can be detected by means of filtered ultra-violet light are seborrhoeic eczema, psoriasis, lupus and X-ray dermatitis.

(To be concluded.)

ECLAMPSIA.

By MISS DOROTHY M. DICKINSON, S.R.N., M.B.C.N.

Eclampsia is a condition characterised by convulsions which supervenes on untreated or insufficiently treated albuminuria of a nephritic type, toxæmia of pregnancy. It is supposed that pregnancy in some cases is too great a strain on the excretory organs, particularly the kidneys, of the individual. As a result, the condition of albuminuria may arise and increase in intensity until the patient has become so toxic that eclampsia supervenes.

Albuminuria or the pre-eclamptic stage is diagnosed by the following symptoms: Albumin in the urine, oedema of the legs and feet, vulva, hands and face. The patient complains of bagginess under the eyes, headache, disturbances of eyesight such as black floating specks, flashes of light and even blindness. There may be vomiting and constipation. The blood pressure is raised to 180-200-240 m.m. and the excretion of urine is diminished. As soon as the patient has a convulsion she has passed into a state of eclampsia and her condition is critical.

The convulsions are epileptiform and have two definite stages: (1) tonic stage, which lasts for a few seconds, during which the patient's eyes roll upwards, the jaw is set, the whole body becomes rigid, the respiration arrested and the patient cyanosed. (2) The clonic stage, during which violent jerky movements occur all over the body (the jaws being particularly affected), froth appears on the lips and the face is dusky or purple. The tongue may be bitten and the contents of the bladder and bowel evacuated. Consciousness is lost during the fit, and afterwards the patient is in a heavy drowsy condition. In very severe cases the patient remains unconscious or comatosed between the fits, and may pass rapidly from one fit to another.

The nursing of a case of eclampsia is very important, as the doctor needs the assistance of a quick, efficient nurse who is prepared for any emergency which may arise. It is left to the sagacity of the nurse to protect the patient during a fit. The nurse must have a gag in readiness to place between the teeth so that the tongue is not bitten, prevent the patient from falling off the bed and bruising herself, and take special care that the patient does not receive burns from hot-water bottles during her unconscious periods. During a fit the patient should be placed on her side with the head hanging over the edge of the bed to prevent the saliva from being sucked back into the lungs, and a receiver placed under to receive the saliva. Eclampsia is treated by the doctor by (a) eliminating the poisons from the body; (b) antagonising the convulsive action of the poisons on the nervous system by the administration of ether, chloral or morphia, hypodermically; (c) hastening the delivery by the application of forceps as soon as possible; (d) special treatment such as intravenous, subcutaneous or rectal saline. The doctor may endeavour to eliminate the poisons by means of a stomach lavage (usually given under anaesthetic) and leaving in the stomach 2 oz. of sulphate of soda or *Oi Ricini*.

An enema terebinthinæ may be ordered, followed by hot saline and colonic lavage to evacuate the bowel and eliminate as much toxin as possible by this route. The increased action of the skin may be promoted by

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