anaesthetist, shock and dehydration are the same thing, and I am glad to see that Dr. Marriott emphasizes this (Marriott, 1951). Let our assessment of the degree of dehydration be based mainly on the history and clinical examination of the patient (which will include the examination of the urine), never forgetting the patient's weight, which I know from personal experience is undoubtedly of the greatest value, as it can be checked easily at frequent intervals.

Pre-operatively, the clinically dehydrated patient of average weight, say 70 kg., should, as a minimum, receive 5 pints (2.8 l.) normal saline, which should include 100 g. glucose to lessen the obligatory urine volume (Gamble) and potassium loss. Where the loss of cation is principally distal to the pylorus, Hartmann's solution may be used.

During operation the anaesthetist will replace blood and treat shock with blood or plasma substitute as indicated and give, where necessary, small quantities of N/5 or N/2 saline to replace visible sweat (and incidentally to keep the drip running). Post-operatively, a basic amount of 5 pints 5% glucose will be given to replace loss by urine and insensible perspiration. Normal saline is only indicated to replace any loss of gastro-intestinal secretion—practically, more accurate than N/2 saline—and to continue treatment of any pre-operative deficit.

Operation is often insisted upon as soon as possible, and therefore the maximum rate of infusion which was recommended by Darrow and Pratt of 2 litres per hour for a 70-kg. man may be used, provided there are no cardiac or other contraindications.

Lastly, potassium deficiency is now well recognized (*Lancet*, 1951, 1, 393) and it is possible that ideally all dehydrated patients undergoing operation should receive potassium. This may be given as Darrow's K-lactate solution at a maximum rate of 80 ml. per kg. per day over a period of four hours by subcutaneous drip, provided there is an adequate urinary volume. Many patients, however, are treated successfully without parenteral potassium therapy, which can be dangerous.

The post-operative progress of the patient should be checked by repeated clinical examinations, which on the average patient will be undertaken daily, coupled with the change in the patient's weight and the fluid-balance chart.

I trust that this letter will provoke further suggestions for the practical treatment of dehydration to assist those who daily have to deal with this problem without expert advice.—I am, etc.,

Twickenham, Middlesex. J. MIDDLETON PRICE.

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Shortage of X-ray Film

SIR,—At its last meeting members of the Joint Tuberculosis Council expressed their concern about the shortage of *x*-ray film. Causes and remedies were discussed: it was decided to ask for the hospitality of your columns and, if you agree about the urgency of the matter, your editorial support to help overcome the crisis. The manufacturers assure us that output continues at maximum level, but an export quota has to be met before the home market can be supplied. This export quota may amount to as much as between a quarter and a third of the total output. If we were engaged in a non-essential industry we might fairly be expected to accept it, but the maintenance of the health of the population is fundamental to the satisfactory carrying-on of all the other industries in these times of shortage of manpower.

We know that difficulty in obtaining supplies is already interfering with the work of some chest clinics and sanatoria. It will take only a slight further deterioration in the situation to bring about a widespread dislocation in the chest services. We are aware that this is only one aspect of the whole problem of *x*-ray film shortage, but it is the one which touches us most nearly.

The Ministry of Health has stated that the shortage is mainly due to increased consumption. Advancing knowledge in medicine and surgery is intimately bound up with advances in radiology. The wider use which has been made of this specialty has necessitated an increased consumption of *x*-ray film, and this increase must be expected to continue.

We have an incontestable case for urging the Minister of Health to maintain all possible economies, and also to bring all possible pressure to bear on those concerned with the ordering of the export quota to reduce it to a level consistent with the safety of the whole working of the National Health Service. The Minister must be aware that in this matter his interests and ours are the same. His hand will be strengthened and his efforts more likely to be successful if he can show that the hospital service is doing all it can to economize in the use of *x*-ray film in these difficult times.

It is one of the anxieties of this winter that variations in electricity supplies, over which we have no control, may cause many films to be spoilt, and so increase consumption. But there are ways in which we can exercise our ingenuity to make the utmost use of our supplies, and it behoves us all—clinicians, radiologists, and radiographers alike—to see that no unnecessary films are asked for, and that no square inch of film is wasted.—We are, etc.,

PETER W. EDWARDS,
Chairman,
R. L. MIDGLEY,
Hon. Secretary,
Joint Tuberculosis Council.

Exophthalmos

SIR,—I have read with great interest Mr. F. F. Rundle's admirable lecture (December 15, 1951, p. 1433). I would like to put in a plea, however, for Mr. Rundle to qualify one of his statements. He says:

"Should we, or should we not, use the antithyroid drugs? [in the management of the ordinary patient with thyrotoxicosis] I believe the answer is emphatically yes, that we should use the thiouracils in every case of thyrotoxicosis: with the thiouracils the toxic goitre can be quickly converted into a non-toxic goitre. In fact, at the present time, the practical management of thyrotoxicosis should proceed by the following steps. First, all toxic goitres should be converted into non-toxic goitres by antithyroid therapy."

It is the impression of many people interested in the subject that exophthalmos (proptosis) and exophthalmic ophthalmoplegia have become much more frequent in the last few years. About 16 years ago, when Dunhill, Joll, and Keynes were leading in making thyroid surgery safe and popular, exophthalmic ophthalmoplegia after operation was comparatively rare. To-day, it is a much more frequent occurrence; it has also been observed after antithyroid drug treatment. The explanation for this is, in my opinion, based on the pituitary–thyroid axis theory, as mentioned in Mr. Rundle's paper. Thyrotropic (or thyroid-stimulating) hormone is, we now believe, responsible for true exophthalmos and exophthalmic ophthalmoplegia. Thyroid hormone in excess suppresses thyrotropic hormone. Lack of thyroid hormone will upset the balance of the two hormones in favour of "thyrotropism."

Fifteen years ago, when the preparation for partial thyroidectomy consisted in the administration of Lugol's iodine, this caused a temporary concentration of thyroid hormone in the thyroid gland, but did not suppress its production. Hence, there was an antagonist present to thyrotropic hormone in the body. Antithyroid drugs prevent the production of thyroid hormone. Accordingly there is no factor present to act as balance to thyrotropic hormone. Furthermore, subtotal thyroidectomy is much more extensive nowadays. The sudden removal of the larger part of the gland may account for the occasional occurrence of post-operative exophthalmos even in cases prepared only with iodine.—I am, etc.,

London, S.W.3. V. C. MEDVEI.

Post-leucotomy Anxiety

SIR,—Dr. Clifford Allen (December 15, 1951, p. 1463) quotes a case of a leucotomized schizophrenic squandering an inheritance of £7,000, from which he concludes that it is unwise to trust such patients with responsibility, no matter how normal they look. Psychiatrists will agree that this is