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.

REFERENCES

Darrow, D. C., and Pratt, E. L. (1950). *J. Amer. med. Ass.*, **143**, 365, 432.
Finley, R. K., *et al.* (1951). *J. thorac. Surg.*, **22**, 219.
Gamble, J. L. (1947). *Chemical Anatomy, Physiology and Pathology of the Extracellular Fluid*, Cambridge, Mass.
Marriott, H. L. (1951). In *Medical Treatment*, ed. Geoffrey Evans, Butterworth, London.
Selye, H. (1949). *Practitioner*, **163**, 393.
Wilkinson, A. W., *et al.* (1951). *Lancet*, **1**, 315.

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

a safe precaution, and I have seen several instances of similar disturbed judgments and impaired sense of responsibility in patients discharged following leucotomy, particularly in schizophrenics. One should never regard these patients as absolutely cured by leucotomy. The schizophrenic reaction is more deeply rooted in the constitution than is the case with other types of personality disorder, with the exception of the psychopath.

In contrast to Dr. Allen's supposition of the employer losing money as the result of mistakes made by a leucotomized employee, I would like to quote an actual case of an elderly melancholic shorthand-typist who on returning to work following leucotomy promptly discovered a discrepancy in the firm's accounts despite a recent audit, and consequently saved her employers a sum of over £1,000. It is my experience that undesirable personality defects seldom occur after a lower quadrant leucotomy in the elderly chronic melancholic, and it is in this group of cases that one finds the most successful and gratifying results.—I am, etc.,

Sheffield. F. T. THORPE.

Invite Russian Doctors

SIR,—May I, albeit belatedly, support Dr. R. L. Kitching's proposal (December 1, 1951, p. 1337) to invite members of the Russian medical profession to England? In the present stifling atmosphere of suspicion and denigration it is refreshing to recall that a little good will is entirely seasonable. I should like, however, to ask whether, in the first place, it would really be necessary to arrange such an invitation through diplomatic channels. It seems to me that this would weigh the scheme down with an unnecessary burden of formality. Would it not be possible to communicate directly with the representatives of the Russian medical profession? Secondly, would it be advisable to enforce the principle of freedom to the extent of simply asking the visitors "to say what they would like to see?" I feel that if I, without a word of Russian and with no idea of the organization of Russian life or Russian medicine, were faced with such an invitation to Moscow, I should be more than a little bewildered. Besides, any nation will have features in its life of which it is particularly proud, at which the visitor might perhaps not even guess. Surely it is natural to show a visitor round at first: later he may find things which interest him especially, and ask to see more of them.—I am, etc.,

London, W.8. JOHN MCFIE.

SIR,—The proposal advanced by Dr. R. L. Kitching (December 1, 1951, p. 1337) that we should invite a group of Russian doctors over here is an excellent one. I am sure that such a visit will help to promote good will and that we should be helping in a small way to ease the troubles of a war-worried world. I wonder how many of your readers are aware of the fact that since the war about 10 eminent Russian doctors have visited this country, and during the past two years about six British doctors have visited the Soviet Union? My Society will do all it can to encourage and assist the further development of this interchange of medical delegations.—I am, etc.,

Society for Cultural Relations with the U.S.S.R., London, N.W.10. A. W. LIPMANN KESSEL, Chairman, Medical Committee.

The Doctor and the Courts

SIR,—Dr. George Holloway's letter (December 1, 1951, p. 1339) regarding the Courts' complete indifference to a doctor's responsibilities and commitments at last brings up a matter that should be urgently taken up between the B.M.A. and the Law Society.

I have just had a similar experience at the Assizes held at Winchester. I had to attend at 10 a.m. which necessitated leaving my home at 8.40 a.m. to travel the 38 miles by road. I was kept in suspense for 10 days, and it was only at 4 p.m. on the day before that I received the notice from the plaintiff's solicitor. How is one expected to provide for a locum who could be in time the following morning to see some 20 patients from 9 a.m. onwards? Some patients have travelled from as far as six miles away. The visits for the whole day remained to be done, and a factory appointment for the particular day of the week also had to be attended to, because new entrants had been given notice by post to attend on a particular day at a particular time.

"The Majesty of the Law" needs bringing up to date. Simply because it still has to enforce Acts made in previous centuries there is no reason for the leisurely course of procedure of those times to be maintained. Is it not time that a dictaphone was installed in the court? How long will the Judges of this country continue to write in longhand all that transpires? How often can they hope to keep accurate recordings of the questions and answers of counsel and witnesses?

Later in the day it was found that one of the doctors who had made a recent examination of the patient had not arrived, and I was asked to make a full examination in the jury room. I had to send a policeman to the local hospital for a stethoscope, and wait 20 minutes for it to arrive. After lunch I returned to the court to give further evidence of my latest examination: Counsel decided not to use it, and the Judge released me. I was home again at 4 p.m.

I am sure that most doctors would be pleased if the B.M.A. took these court matters up. Perhaps we would receive a little more respect if the Law realized that the B.M.A. was alive to our problems.—I am, etc.,

Christchurch, Hants. E. F. HUNT.

Criminal Responsibility

SIR,—I must have been one among many in being nauseated recently by reading in the papers that a youth of 19 had been hanged for a callous murder, callous not in the sense of hardened but of unfeeling or without emotion, which at that age is terribly suggestive of schizophrenia.

I suggest that in cases like this, after the question, "Did the prisoner know that what he was doing was wrong?" has been answered by "Yes," a further question, "Was the prisoner by reason of illness or physical defect incapable of *caring* whether his act was right or wrong?" should be put, if not to the jury, at any rate by the Home Secretary to his experts before death is decided on. The essential point is that the atrophy of emotion in schizophrenia can closely resemble that which results from a life of viciousness.

The very articulate but limited legal mind has always shied against the view that criminality can arise from any source except innate wickedness; instinctively it fears that too many of what it considers its lawful prey might escape or be too leniently dealt with for reasons of which its training deprives it of judging the validity. Two further considerations arise:

Continuous efforts should be made to convince our brilliant but slightly case-hardened sister profession that a criminal act is often the first sign of an illness. Many a time in cases of indecent assault counsel have pointed to the humiliated features of a hitherto respectable old gentleman in the dock, when in justice they should have pointed lower down and indicated a large prostate; many a half-cunning theft has been the first sign of a senile dementia. I once came across the case of a young priest who was sentenced for an isolated series of homosexual offences and on admission to prison was found to be suffering from an acute exudative pulmonary tuberculous lesion. Anyone who is familiar with the mental regression in acute toxaemia will recognize this as being, if not the cause of the crime, at any rate so contributory as to verge on condonation.

There is a far more important aspect of this matter than the fate of a few stricken creatures. The abstract idea of Justice in the minds of an educated democracy is enhanced and more revered if it is known that all established knowledge is taken into its cognizance. The figure of Justice, blinded so that she shall better feel the tilt of the scales, is made ludicrous if at the same time she hugs to her bosom prejudices against facts long known.—I am, etc.,

Beckley, Rye. C. G. LEAROYD.