matter, and perfume.¹ It has been found that both the quaternary ammonium compounds and the amido-amines give positive results with tests for proteinuria using tetrabromophenolphthalein and tetrabromophenol blue (Albustix). Since our health visitors have advised the mothers to place the filter-paper in nappies not treated with fabric softeners the incidence of false positive tests has markedly fallen.

We are grateful for help from Dr. J. W. Richardson, of Lever Bros. Ltd., and Dr. A. T. Bowerman, of Proctor & Gamble Ltd.

—We are, etc.,

T. M. HAYES.
ANN LASHFORD.

Department of Metabolic Medicine,
Royal Infirmary, Cardiff.

REFERENCE

- ¹ Evans, W. P., *Chemistry and Industry*, 1969, p. 893.

Impotence in Farm Workers

SIR,—The report by Dr. M. L. E. Espir and others (14 February, p. 423) of four cases of impotence in farm workers who had been handling various pesticides and herbicides indicates once more the dangerous nature of these chemicals. It should stimulate the Government departments concerned to haul themselves out of complacency regarding the safety regulations relating to these chemicals.

Although Dr. Espir and his colleagues are at pains not to specify which chemical was responsible for the impotence, the facts they report suggest that the organophosphorus group was the most likely culprit. If it had not been for two frustrated wives one wonders what the eventual outcome would have been in at least two of the cases.

It seems extraordinary that in the latest edition of the leaflet *The Safe Use of Chemicals on the Farm*¹ issued by the Ministry of Agriculture, Fisheries and Food employers are not compelled to arrange for routine estimations of cholinesterase activity in their employees involved in the handling of organophosphorus chemicals. As it is, employers are only "strongly recommended" to arrange for their workers to be medically supervised.

For many years routine checks of cholinesterase activity have been advocated as an important factor in the prevention of organophosphorus poisoning. Gage² pointed out that it was important to have pre-exposure estimations of cholinesterase activity because this varied from person to person. Therefore, not only is it important to perform routine checks after the handling of these chemicals, but ideally a cholinesterase estimation should be made before the work begins. Edson³ recommended that all workers involved in crop-spraying operations should have periodic estimations of cholinesterase activity, especially employees of crop-spraying contractors.

Few cases of organophosphorus poisoning have been reported in this country.^{4,5} However, the cases reported by Dr. Espir and his colleagues suggest that the problem of poisoning by insecticides may be much greater than the number of previously reported cases indicates. It would be interesting to know how many unexplained accidents on farms have been due to insecticides, and, indeed, it would be interesting to know the incidence of frus-

trated wives among the employees of crop-spraying contractors and others frequently involved in the handling of these chemicals.—I am, etc.,

I. H. REDHEAD.

Norman Cross
Nr. Peterborough

REFERENCES

- ¹ Ministry of Agriculture, Fisheries and Food. *The Safe Use of Poisonous Chemicals on the Farm*. Leaflet (APS/1). 1969.
² Gage, J. C., *British Medical Journal*, 1955, 1, 1370.
³ Edson, E. F., *British Medical Journal*, 1955, 1, 841.
⁴ Rossiter, E. J. R., *Practitioner*, 1960, 184, 769.
⁵ Redhead, I. H., *Lancet*, 1968, 1, 686.

Cat Leukaemia

SIR,—According to a number of recent reports^{1,2} there is much interest at the present time in a possible connexion between human and animal leukaemia. An epidemiological study aimed at establishing a connexion between human and feline leukaemia has been initiated at Bethesda, Maryland, by the U.S. National Cancer Institute. At the University of Missouri canine leukaemia is being surveyed epidemiologically by Dr. C. R. Dorn. In Glasgow, at the Animal Leukaemic Research Unit, the Jarrett brothers have shown that the feline leukaemia virus infects human cells in culture. However, Dr. T. E. O'Connor, of Bethesda, has stated that fewer than a quarter of leukaemia patients have cats.

In my modest experience I have found that the households of eight out of 21 children who died recently of leukaemia had kept cats and that six others had kept dogs. In several instances the animals were known to be sick. If two cases of Hodgkin's disease and five of lymphosarcoma were added, altogether 11 cats and 10 dogs were found in the 28 different households; furthermore five families kept budgerigars. An equal number of normal paired control households kept five cats, seven dogs, and one budgerigar. These families all lived in an urban area and the pets were kept at close quarters with the children. When considering other childhood cancers very little difference was found between cases and controls.

This type of inquiry is not accurate enough to allow any definite conclusion to be drawn, but the results suggest that it might possibly be a good thing to set up a planned investigation of a similar type in Britain.—I am, etc.,

MARGARET PENROSE.

London N.W.11.

REFERENCES

- ¹ *Science News* (Washington), 1970, 97, 23.
² *World Medicine*, 1969, 5, No. 4, p. 17.

Cost of Anaesthetic Agents

SIR,—Dr. C. E. Briscoe's observations on the price of oxygen in hospital (21 February, p. 488) made me look at the cost to the N.H.S. of the same gas when prescribed on E.C. 10 for patients at home.

According to the Drug Tariff (1970 Edition) 48 cu. ft. of oxygen in the standard cylinder costs a basic 27s. The Pricing Bureau tells me that to this is added 10½% on cost, 7s. 6d. dispensing fee, and 2d. container allowance—total 37s. 6d. In addition a delivery fee is payable, varying according

to number of cylinders and time of day or night. The cost to the N.H.S. is therefore 9.4d. per cubic foot if the patient collects—more if the chemist delivers. No doubt part of the basic 27s. pays for depreciation of cylinders, but so presumably does part of the charge to the hospitals. According to Dr. Briscoe's figures, the cost per cu. ft. to the N.H.S. is 4.12d. from a 24 cu. ft. cylinder, 0.99d. from a 240 cu. ft. cylinder, and 0.37d. when coming from a piped supply.

Considering the difficulties of handling and storing cylinders, I do not think the chemist is overpaid. Supplying oxygen to patients at home must remain a relatively expensive exercise—until one looks at the hospital beds that are thereby being freed.

But that a whiff of the same gas should cost the N.H.S. twenty-five times as much at home as it does in an up-to-date hospital seems odd. Can someone explain?—I am, etc.,

JOHN S. PATTERSON.

Edinburgh.

SIR,—We were very interested to read Dr. C. E. Briscoe's article on halving the cost of anaesthetic agents (21 February, p. 488). We have long felt that anaesthetists are far too lax in their use of exceedingly costly drugs, and that we can give a lead to the profession in economy measures. We have taught that gallamine is not only cheaper than D-tubocurarine, but also saves dollars when used in its stead. It has the further advantage that when exhibited together with halothane it does not lower blood pressure. This also applies to the newer pancuronium.

Since the publication of the use of low-flow gases together with halothane during spontaneous ventilation¹ we have used this method as the one of choice when not instructing students, and have been impressed not only with its considerable economy as compared with high gas flows, but also with the ease of administration and the smoothness of the anaesthetic. Economy is achieved by using only a 2-litre mixed gas flow, thus evaporating a very small amount of halothane.

The question now arises as to whether the Magill circuit is ever really indicated in modern anaesthesia, except for the administration of trichloroethylene. The high gas flow implicit in its use is a certain barrier to economy, and its advantages over an absorber system are tenuous, to say the least.—We are, etc.,

J. A. THORNTON.
C. J. LEVY.

Department of Anaesthetics,
University of Sheffield,
Yorks.

REFERENCE

- ¹ Mushin, W. W., and Galloon, S., *British Journal of Anaesthesia*, 1960, 32, 324.

Idoxuridine and Motor Neurone Disease

SIR,—Prolonged clinical acquaintance with cases of motor neurone disease in any of its forms induces an irresistible desire to grasp at any therapeutic straws which may offer a chance to counter the inexorable downward course of this malady. Our neurological department encounters 20 to 25 new cases of this condition each year, and it has been our practice to follow up all our cases at

frequent intervals, partly to assess our attempts to modify the fatal course of the illness, and partly to bring what comfort and support we can to the patients and their relatives in the face of the inevitable.

Some years ago, a suggestion that this degenerative disease might be metabolic in origin and correlatable with aminoacid therapy led one of us to try the effect of high dosage of aminoacids, glycyocamine and betaine,¹ but that idea, like all others, proved totally ineffectual. Later we ventured into a similarly fruitless (and unreported) essay using raw liver.

Currently, the concept of the "slow virus" as a possible cause of various and mysterious disorders, ranging from kuru to multiple sclerosis, led us to consider the possibility that the causative agent of motor neurone disease might also be a slow virus, damaging the motor cells of the motor system and acting in the same way as the polio virus over a very lengthy period. There is no factual basis for such an idea. Consequently, the emergence of idoxuridine as an antiviral agent proved only too great a therapeutic temptation, and we accordingly embarked upon the enterprise which is here reported without enthusiasm.

Ten unselected successive cases were treated. It so happened that eight were female and two male, although this does not represent our normal sex distribution. Ages ranged from 28 to 68 years. Idoxuridine was given as an intravenous infusion composed of 1.5 g. of the active substance and 500 ml. of 5% dextrose, over a period of three hours. The solution must be made up fresh each day as it deteriorates rapidly, and an infusion was given on five successive days.

We scored the patients' muscular power limb by limb on the arbitrary scale used in the betaine and glycyocamine trial.¹ Examinations were made before treatment and then at two-monthly intervals. The treatment had absolutely no influence on the course of the disease and five of the ten patients have already died at the expected time of two to five years after the onset of their disease. The remaining five are worsening steadily. On the other hand, there were no serious adverse reactions: there was no loss of hair; in three cases the platelet counts fell to 150,000/cu.mm. with a rapid return to normal. One patient already bed-ridden developed a calf vein thrombosis which settled spontaneously in the normal way. A minor psychological benefit accrued temporarily in the patients' relatives in that something was being done.

Our conclusion is that this form of treatment in the dosage employed is totally ineffective.—We are, etc.,

L. A. LIVERSEDGE.
W. R. SWINBURN.
G. M. YUILL.

University Department of Neurology
Royal Infirmary, Manchester.

REFERENCE

- ¹ Liversedge, L. A., *Lancet*, 1956, 2, 1136.

Comminuted Skull Fracture in a Neonate

SIR,—I wish to report what must be a rare complication in the use of Ventouse forceps. After an uneventful pregnancy, the mother—a primipara—went into labour at

term. Labour was prolonged, and Ventouse forceps were applied unsuccessfully at 40 hours. Lower segment caesarian section was performed two hours later owing to maternal and fetal distress and borderline cephalopelvic disproportion.

Appar scoring at 1 minute was 6 and spontaneous respiration was established at 2 minutes. On examination the baby, a female, had severe moulding of the skull and a superficial abrasion of the scalp at the site of application of the forceps. The circumference of the head was 13½ in. (33 cm.), and the weight 6 lbs. 3 ozs. (2.73 kg.). The baby was rather irritable and unhappy and resented handling. She appeared to be somewhat hypertonic.

Lumbar puncture produced a faintly straw-coloured fluid containing occasional lymphocytes and red cells, protein 110 mg./100 ml., sugar 90 mg./100 ml. It was sterile on culture. Subdural tap was negative. X-ray of skull revealed a few separate bony flakes in the region of the posterior fontanelle.

She was kept under observation and sedated with phenobarbitone. There was gradual improvement, but on discharge at 2 weeks she still showed signs of mild cerebral irritation.

She has been seen on three occasions in the follow-up clinic. On the last visit at the age of 10 months she was doing very well and free of symptoms. Her general progress and development were satisfactory, and complete physical examination was negative, with no residual signs of brain damage. Repeat x-ray shows complete healing of the fracture.

I wish to thank Dr. G. Rajan, consultant paediatrician, for allowing me to publish this case.—I am, etc.,

D. K. GORBANI.
Staincliffe General Hospital,
Dewsbury, Yorks.

From Soft to Hard Drugs

SIR,—In his interesting study of drug users in a London remand home Dr. P. J. Noble (10 January, p. 102) found that within a short period of 2–4 years approximately 20% had progressed from soft (mainly amphetamines and cannabis) to hard drugs, and he concluded that the real proportion was likely to be even higher in view of the under-reporting to the Home Office. However, as Dr. Noble himself says, a

remand home population of drug takers is selective, and even his soft drug takers group contained a high proportion of disturbed personalities. Moreover, as confirmed by Dr. Noble, progression to hard drugs is likely to be higher among those takers of soft drugs with more disturbed personalities. Therefore, progression from soft to hard drugs among a random sample taken from the majority of adolescent drug takers would probably occur in considerably less than one fifth of the users.

Similarly, a recent inquiry among approximately 50 cannabis smokers concerning the percentage of their smoking friends known to have progressed to hard drugs, found it to be over 10%.¹ However, the great majority of the drug users interviewed were smokers who had become heroin addicts. Among them, and particularly among those seen in prison (likely on the whole to be more disturbed personalities) the proportion of smoking friends known to have gone on to hard drugs was much higher than 10% whereas among those with a relatively normal personality (such as cannabis-smoking students) such progression was generally reported to be very rare.

Thus in the whole sample the estimated proportion of "escalators" was regarded as likely to be markedly above the average, and the percentage of average cannabis smokers proceeding to heroin likely to be considerably below 10%. Incidentally, in the case of cannabis smokers, progression is probably more likely to L.S.D. than to heroin; progression to heroin may be relatively more common in amphetamine abusers.—I am, etc.,

M. M. GLATT.

St. Bernard's Hospital,
Southall, Middx.

REFERENCE

- ¹ Glatt, M. M., *British Journal of Addiction*, 1969, 64, 109.

Employment of Psychiatric Patients

SIR,—Together with social work and nursing colleagues, I have become concerned at the effect of recently introduced regulations upon the employment prospects of patients in this hospital.¹

It seems to me that patients in a psychiatric hospital who are suitable for rehabilitation and whom we are striving to re-establish in the outside community are now at a disadvantage. If they work more than eight hours a week or earn more than £4 they lose entitlement to benefit under the National Insurance Scheme. To purchase a self-employed stamp is financially prohibitive. On the other hand, they may be quite unable to convince an employer that they are worth say £20 for a week's work (that is, wages plus insurance plus S.E.T.).

It is likely that a large number of long-stay patients are affected and some modification of the regulations seems to be urgently required.—I am, etc.,

J. K. W. MORRICE.

Royal Cornhill Hospital,
Aberdeen.

REFERENCE

- ¹ *New National Insurance Flat Rate and Coordinated Contributions*. Ministry of Social Security Leaflet N.I.167, H.M.S.O., London, 1969.