cheeks (see fig.). These were entirely painless, and in fact the patient herself was initially completely unaware of them. There was no associated lymphadenopathy. Examination of other mucous membranes showed no evidence of ulceration. Swabs sent for bacteriological studies revealed no yeasts or organisms of Vincent's angina, and grew nothing on culture. Her white blood cell count and temperature remained within normal limits.

The patient denied any trauma but did admit to sucking her slow-release potassium tablets; she apparently swallowed all her other medications. The potassium supplements were changed to an effervescent form, and over the course of the next 7-10 days the ulcers healed completely.

Slow-release tablets of potassium chloride have been formulated because it is thought that rapid release of potassium chloride over a short segment of intestine is the precipitating factor in the ulceration produced by enteric-coated supplements.³ With these preparations the solubility of potassium chloride is reduced by partially coating the crystals with an inert insoluble wax and with a sugar rather than enteric coating. The tablets release potassium chloride over a period of four hours compared with 15 minutes for those that are enteric-coated.³ Studies with slow-release potassium preparations have shown that the potassium chloride is effectively absorbed and does not produce side effects.⁴ However, under the unusual circumstances of the tablets being sucked it seems that high concentrations of potassium chloride are in contact with relatively small areas of mucosa and can thus induce ulceration.

I would like to thank Dr. Andrew Allison for his help and encouragement and for his permission to report this case.

—I am, etc.,

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¹ Baker, D. R., Schrader, W. H., and Hitchcock, C. R., *Journal of the American Medical Association*, 1964, **190**, 586.

² Lindholmer, B., Nyman, E., and Räf, L., *Acta Chirurgica Scandinavica*, 1964, **128**, 310.

³ Martindale, *Extra Pharmacopoeia*, 26th edn., ed. N. W. Blacow. London, Pharmaceutical Press, 1972.

⁴ Wynn, V., *Lancet*, 1965, **2**, 1241.

Post-herpetic Pruritus

SIR,—In September 1973 a 35-year-old man developed pain in his right upper arm and shoulder. A few days later he developed typical lesions of herpes zoster on the inner

aspect of the right upper arm and the right side of the upper trunk. The rash was severe but eventually settled and apart from the scars of shingles he was left with severe intractable irritation around the right axilla and right upper inner arm, together with some pain in the right shoulder region. Clinical examination revealed scars of herpes zoster predominantly in the dermatomes of T2 and T3 and there was hypoaesthesia in the region of T2 on the inner upper arm. Haemoglobin, full blood count, and erythrocyte sedimentation rate were all normal and no abnormality was seen on x-ray of his chest and right shoulder. X-ray of his upper spine merely showed degeneration of the eighth dorsal disc. Despite treatment for almost a year with various local preparations (including steroid creams) and systemic therapy with various antihistamines, sedatives, analgesics, and carbamazepine the severe pruritus has persisted, overshadowing his shoulder pain.

Post-herpetic neuralgia is rare in young people, and though severe itching can occur as a troublesome sequel to herpes zoster,¹ it is by no means common. This young man has been unfortunate on both counts. The zoster-varicella virus causes acute inflammation at some point in the course of the first sensory neurone, the dorsal root ganglia and corresponding sensory ganglia of cranial nerves being the commonest sites. Microscopic changes include haemorrhage and infiltration with mononuclear cells, and in severe cases fibrosis and secondary degeneration can occur. These changes can lead to persistent post-herpetic symptoms. This man has post-herpetic neuralgia, hypoaesthesia, and severe pruritus in the root distribution.

It is generally accepted that post-herpetic neuralgia is very resistant to therapy and this case report illustrates that post-herpetic pruritus can be just as aggravating to the physician as well as the patient.—I am, etc.,

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¹ Brain, W. R., and Walton, J. A., *Brain's Diseases of the Nervous System*, 7th edn. London, Oxford University Press, 1969.

La Condition Humaine

SIR,—Sympathy must of course be given to a number of Dr. S. Bradshaw's views (14 September, p. 682), but somewhere his tocsin has become intoxicated and his carillon most definitely cracked. It seems that the blind villain and its skivvy arrived from outer space after Queen Victoria died. Just how did science and technology arise? Slowly and gradually and basically of God; Christians must believe this. Can Adam now replace the fruit and tiptoe through the unknown grass again with Eve, ignorant even of their nakedness? Science means knowledge, and unless Dr. Bradshaw is a fundamentalist he will probably agree that total ignorance is not necessarily the most blessed state for human beings. When we knew little we were not so far from the animals. As knowledge has advanced so have our capacities for evil and the worship of false gods; so also, I firmly believe, has our capacity for collective good. It is not science and technology that is the anti-Christ but our

own faults, and this has been so from the time of Herod.—I am, etc.,

JAMES MILLAR

Oxford

Value of Hospital Case Notes

SIR,—During the course of a broadcast presentation on "Family Practice" on B.B.C.4 on the evening of 1 October a general practitioner referred to the fact that on certain hospital notes were printed the words, "Not to be seen by the patient." He commented that the reason for this was not to avoid the patient's embarrassment by finding out what might be the matter with him, but because the content of the notes was "rubbish." He repeated this statement and in spite of a telephone call to the B.B.C. to ask that this wholesale criticism of the hospital service should be withdrawn, no further comment was made.

It is most regrettable that any member of our profession should allow himself to make such sweeping condemnatory statements of other sections of the profession at a time when we are trying to overcome the barriers which still exist still between those responsible for primary care and those working under similarly difficult conditions in the hospital service. If this public statement is allowed to go unchallenged it remains as a sad indictment of literally thousands of over-worked hospital residents who have insufficient secretarial assistance and whose notes on the whole are comprehensive and dependable. One wonders whether this particular practitioner considered that the notes that he himself wrote during his resident posts were worthy of such a description.—I am, etc.,

D. F. ELLISON NASH

London S.E.19

Lead and Intelligence

SIR,—Your leading article (28 September, p. 761) is acceptable as a grudging admission that a problem exists in relation to the effects of lead on behaviour. As a review of the recent work on this important subject, however, it is inadequate on several counts.

There is now a great deal of evidence that lead can adversely affect behaviour, most often by the production of hyperactivity. On this account the correlation between I.Q. and educability does not always hold in the children affected because of their poor attention span. It is curious that this observation was not commented upon since it is one of the most significant made by Byers and Lord in their classic paper which appeared in 1943.¹

Again, in addition to the negative findings of Lansdowne *et al.*,² which were criticized by a number of authors³⁻⁵ as to both methodology and conclusions, one would have wished to see some of the more recent reports included which show clearly that behavioural changes can be induced by relatively modest body burdens of lead. A study from El Paso⁶ states unequivocally that "children with blood lead levels $\geq 40 \mu\text{g}/100 \text{ ml}$ have diffuse and subtle impairment of the fine motor, perceptual, and visual perceptual skills." When it is realized that in many American cities 25-30% or more of the children examined in large screening programmes have blood lead levels greater

than 40 µg/100 ml one begins to have some awareness of the gravity of the situation.⁷ In view of these results we think it regrettable that the authorities in Britain have not seen fit to institute a similar screening programme on children in British cities. No doubt too much time would be spent in deciding which laboratory could be trusted to provide the right blood lead levels.

The appearance of the "chicken-or-the-egg" hypothesis was predictable but unnecessary in view of a number of elegant studies from America which have demonstrated that hyperactivity can be induced in rats suckled by mothers fed lead in their diets,^{8,11} whereas those suckled by mothers on normal diets are unaffected. This hyperactive behaviour shows a paradoxical pattern of response to drug treatment identical with that of "pure" hyperactivity in children¹⁰ and is correlated with changes in neurotransmitter metabolism in the brain.⁸ David's demonstration¹² that children with "pure" hyperactivity have high body burdens of lead was obliquely criticized in your article, but David has since repeated his study with larger groups of children and has confirmed his earlier studies to a high degree of statistical significance.¹³ Of even more importance, however, is his finding that all children with "pure" hyperactivity, even those with blood lead levels in the "normal" range, are cured by treatment with penicillamine and that the cure is permanent so far as can be judged after a one-year follow-up.¹³

You dismiss airborne lead as being of no significance in terms of domestic exposure and attempt to corroborate your statement by a very misleading juxtaposition of figures. You compare the 15 µg of lead absorbed per day from the atmosphere with the 200-300 µg contained in the diet before absorption. The non-specialist medical reader might easily be led to infer that airborne lead is only one-twentieth as great a threat as that contained in the diet. What must be remembered is that only about 10% of the lead presented to the gastrointestinal tract is absorbed—20-30 µg, an amount of the same order as that absorbed from air. Children of course absorb considerably more from the gut, about 50%, but on the other hand we do not know what fraction of inhaled air children absorb. And it is the children who are most at risk, not consenting adults. The United States National Research Council state this with great clarity when they write, "The other special category of inner city inhabitants for whom the level of lead in ambient air presents a significant threat consists of infants and young children."¹⁴

We agree with you on the need for more research and are now engaged on this. But we consider that the findings mentioned above already go a long way to providing a solution to the problem which you pessimistically think will long remain unsolved.—We are, etc.,

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SELWYN SMITH

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Department of Social Medicine,
University of Birmingham

- 4 Bryce-Smith, D., and Waldron, H. A., *Lancet*, 1974, 1, 1166.
- 5 Landrigan, P. J., Whitworth, R. H., and Baloh, R. W., *Lancet*, 1974, 1, 1167.
- 6 Whitworth, R. H., et al., *Morbidity and Mortality Weekly Report*, 1974, 23, 157.
- 7 Waldron, H. A., and Stöfen, D., *Sub-Clinical Lead Poisoning*, p. 122. Academic Press, London, 1974.
- 8 Sauerhoff, M. W., and Michaelson, I. A., *Science*, 1973, 182, 1022.
- 9 Silbergeld, E. K., and Goldberg, A. M., *Life Sciences*, 1973, 13, 1275.
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- 12 David, O., Clark, J., and Voeller, K., *Lancet*, 1972, 2, 900.
- 13 David, O., personal communications.
- 14 National Research Council, *Airborne Lead in Perspective*, p. 328, Washington, United States National Academy of Sciences, 1971.

Semen Cryobanking

SIR,—Having had some experience with artificial insemination by donor (A.I.D.), frozen semen, and vasectomy counselling, may I comment on the interesting article by Mr. M. S. Frankel on "Role of Semen Cryobanking in American Medicine" (7 September, p. 619).

The author states that "the potential benefits of semen cryobanking are enormous, yet . . . its application (particularly commercially) may produce unexpected and unwanted consequences." There is no evidence to date that the benefits of frozen semen are "enormous." The only advantage that I have found from those who use frozen semen is to avoid donor and recipient meeting each other. As frozen semen is far less likely to cause a successful pregnancy, far more inseminations are required and so the recipient must present herself more often for insemination. It has yet to be proved that there are no late complications or side effects for the progeny when frozen semen is used. As Mr. Frankel himself states, "we still know little about the effects of frozen semen including its efficacy and genetic consequences." Is he not contradicting himself?

Concerning the use of frozen semen as a fertility insurance for men undergoing vasectomy, I am sure that no surgeon in the U.K. would undertake a vasectomy on a man who is concerned with the possibility of wanting more children; he would regard this as a contraindication. Further, no studies have been undertaken (to my knowledge) which indicate that there is a reasonable chance of a successful pregnancy after frozen semen has been stored for several years. The few isolated cases reported in the press do not provide a satisfactory basis on which to offer such a service to prospective vasectomy patients.

Mr. Frankel states that semen cryobanking might be used as a method of "influencing the genetic quality of the species by making available a wide range of genetic material." Surely this indicates that a supply of frozen semen obtained from a "superman" donor, with a potential ability to fertilize many women, should never be contemplated. The health of our species depends upon a variety of genetic material, and until full genetic analysis of chromosomes is possible, who knows what potentially dangerous recessive genes a "superman" donor may be carrying? Furthermore, it is common knowledge that the most brilliant of children have come from the dullest of parents. Therefore a donor of low I.Q., of poor physique, and absolutely antisocial in behaviour may be a

better "superdonor" than a "superman." The conclusions are obvious—keep away from frozen semen, semen banks, and "supermen."

The increasing American practice of freezing dead persons in liquid nitrogen in the hope of reviving them at a later date is far safer for the species. Perhaps it is such ideas that need freezing in liquid nitrogen.—I am, etc.,

JOHN SLOME

London W.1

A Human Right

SIR,—In your leading article (21 September, p. 699) you state: "Today it would be hard to find a medical school preparing its students thoroughly enough to cope with the family planning problems that will loom so large in most of their patients' lives." On behalf of the new medical school in Southampton I would like to submit that at least a serious attempt is being made to provide such preparation for our medical students in that one of the principal aims of the curriculum is to give students an opportunity of assessing priorities in medicine. In this connexion there is no doubt that the case for family planning and population control must be debated.

In the five-year course at Southampton most of the theoretical teaching takes place in interdisciplinary systems courses which form a major part of the curriculum in the first 2½ years. The first systems course is in "human reproduction" and commences midway through the first term of the first year. In this course there are seminar topics on, for example, "the relative place of contraception, sterilization, and abortion in population control," "medical termination of pregnancy," and "economic aspects of population control" and lectures and essays on the various presently available methods of contraception. Indeed, one-sixth of the course in human reproduction is devoted to topics of human sexuality and family planning. In the third year, during their attachment to clinical obstetrics and gynaecology, the students attend contraceptive clinics, including psychosexual problems, and further tutorials on common sexual malfunction. In their fifth and final year, during the period of clinical apprenticeship, weekly participation in the work of a family planning clinic is mandatory.

It is therefore one of the objectives of the course in human reproduction and obstetrics that the new graduates in medicine in Southampton will be thoroughly conversant with family planning methods and with their impact on the lives of their patients.—I am, etc.,

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Squint

SIR,—Your comment on Mr. T. K. Lyle's letter (5 October, p. 43) cannot be allowed to pass unanswered.

If the age of 5 is the commonest age at which concomitant squints undergo surgery, this is not because operation is deferred until this age, but because children are referred to an ophthalmologist some considerable time after the squint has become ap-

1 Byers, R. K., and Lord, E., *American Journal of the Diseases of Children*, 1943, 66, 471.

2 Lansdowne, R. G., et al., *Lancet*, 1974, 1, 538.

3 David, O. J., *Lancet*, 1974, 1, 866.